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THE POLIOMYELITIS VACCINATION PROGRAM IN LOUISIANA*

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The Louisiana State Department of Health's experience through December 15, 1955, indicates that poliomyelitis vaccination produced a definite and marked protective effect against all forms of poliomyelitis.

In 1954, Caddo, Bossier and Rapides Parishes participated in the field trials of the National Foundation for Infantile Paralysis of the Salk poliomyelitis vaccine. In these parishes 3622 children received three inoculations of Salk polio vaccine. Through December 31, 1955, two of these 3622 vaccinated children were reported to the Health Department as having developed poliomyelitis in spite of the fact that 80.5 per cent of them resided in Caddo and Bossier Parishes and that these two Parishes accounted for 25.01 per cent of the 378 cases of poliomyelitis reported in 1955. One of these was reported as paralytic and the other as non-paralytic poliomyelitis. An untypable cytopathogenic agent was isolated from the child reported as having non-paralytic poliomyelitis so this probably was not a case of poliomyelitis. No agent was isolated from the stool of the patient reported as having paralytic poliomyelitis and serologic studies did not reveal a significant change in the level of serum neutralizing antibodies so the diagnosis of poliomyelitis is in question for this case also.

The occurrence of reported cases of poliomyelitis in the early months of 1955, when related to the mean occurrence of reported cases during the previous 5-year period, suggested that a greater number of cases of poliomyelitis would be reported in 1955 than for the mean experience of the period 1950 through 1954. (Figure 1).

The National Foundation for Infantile Paralysis began to supply Salk poliomyelitis vaccine to immunize children in the first and second grades of school to the State Department of Health on April 18, 1955. The State Department of Health started its vaccination program immediately.

By April 13, the occurrence of reported cases of poliomyelitis was increased over the 5-year mean experience and remained increased over this experience until June 28. From June 28 through December 31 the 5-year mean experience was appreciably greater than the 1955 experience.

First and second grade children numbered 164,910. Of these children 81,695 received two injections of poliomyelitis vaccine and 83,215 elected not to be vaccinated.

A study of the occurrence of poliomyelitis in the two groups shows that more than seven times as much paralytic poliomyelitis and more than five times as much of all forms of poliomyelitis occurred in the nonvaccinated as in the vaccinated group. (Table 1)

* Report of the State Epidemiologist to the State Board of Health.

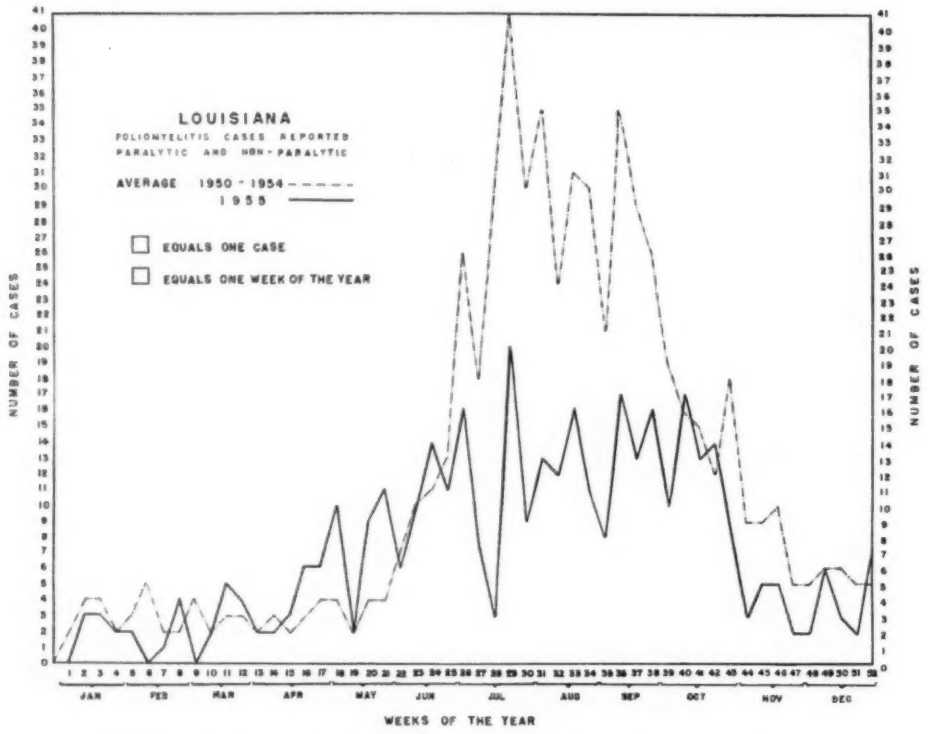

Figure 1

The National Foundation for Infantile Paralysis vaccine was used through September 30, 1955, when the program terminated.

The pattern of occurrence of poliomyelitis in the group of children who were vaccinated against poliomyelitis is different from those who were not vaccinated.

Since the purpose of vaccination is to protect, the number of inoculations with the dose and spacing giving the greatest number of children protection is the pivot around which we must measure. Three injections of the vaccine, with the third injection being given as a booster or recall inoculation seven months after the second, are recommended by the developer of the vaccine as the vaccination procedure which will afford the highest level of demonstrable antibodies in the blood. However, interest is so keen concerning the effectiveness of the vaccine that most states are evaluating on the basis of available experience instead of waiting until after the recall injection and 1956 before assessing the situation.

Arbitrarily in Louisiana, we have designated as vaccinated those children who have been inoculated with the second dose of vaccine at least two weeks. Those children who received no vaccine, who received only one injection of vaccine or who developed poliomyelitis within two weeks of receiving the second inoculation of vaccine, are considered as nonvaccinated. It is possible that if a separate study were made of children who received no vaccine at all and those that received any vaccine at all, but who were not considered as vaccinated children, that the protection afforded by vaccination would be even more manifest, because one injection of vaccine apparently affords some protection and these children with partial protection have been counted in the non-vaccinated group.

TABLE 1
LOUISIANA
POLIOMYELITIS CASES AND RATES BY TYPE OF CASE AND VACCINATION STATUS FOR FIRST AND SECOND GRADES CASES REPORTED AFTER APRIL 18, 1955 *

APRIL 18 THROUGH DECEMBER 15, 1955

Cases and Rates	Paralytic Cases	Rate	Non-Paralytic Cases	Rate	Bulbar Cases	Rate	Total Cases	Rate
**Vaccinated Group 81,695	4	4.9	9	11.0	0	—	13	15.9
Unvaccinated Group 83,215	30	37.2	42	50.4	6	7.2	78	93.7
Overall Totals 164,910	34	20.6	51	30.9	6	3.6	91	55.1

* Vaccination Program began in Louisiana on April 18, 1955.
Rate = Number of cases per 100,000.
Base = All cases reported from April 18 through December 15, 1955 for ages 5 through 9 years.

** Vaccinated Case = Any child in this age group who received two injections of vaccine and whose onset of illness occurred two weeks or more after date of last injection.

The rate per 100,000 population of all reported poliomyelitis in the vaccinated group was 15.9 as compared to 93.7 in the nonvaccinated group. Refining of the data shows the difference in rate of occurrence to be significant for each clinical form of poliomyelitis reported. (Table 1). The difference is particularly marked and gratifying when the occurrence of paralytic poliomyelitis in the vaccinated and nonvaccinated groups is studied. The rate of occurrence of paralytic poliomyelitis in the nonvaccinated group is 37.2, while in the vaccinated group it is only 4.9.

No child who was vaccinated developed bulbar poliomyelitis while 6 children in the nonvaccinated group had bulbar involvement.

Even at this early date there is a measurable difference of occurrence of all forms of poliomyelitis in vaccinated and nonvaccinated children. In 1956, we should acquire a better understanding of the value of vaccination, after the children vaccinated in 1955 and the nonvaccinated children in the same school grades with them in 1956 have been exposed for a calendar year to the risk of poliomyelitis.

No severe reactions to the vaccine were reported. Investigation of reported cases of poliomyelitis in those children who received N.F.I.P. supplied polio vaccine in the State administered program did not suggest in any that the vaccine was the cause of the disease.

One child, reported to the State Department of Health as having poliomyelitis, became ill four days after receiving his first injection of poliomyelitis vaccine from a private physician. This child became paralyzed nine days after injection. Type I and Type III poliomyelitis virus was isolated from the stool of this child. Review of the cases of poliomyelitis studied by the State Department of Health in the period April 18 through November 31, 1955, discloses 4 persons from whose stool specimens two different strains of polio virus were isolated. One, and the only vaccinated person in this group, is the child mentioned above. The other 3 persons were nonvaccinated individuals. Poliomyelitis virus Types I and III were isolated from each of 2 children each less than 4 years of age. Poliomyelitis virus Types II and III were isolated from the only adult in the group—a female. No relationship was established among these four people.

In the period April 18 through November 30, 1955, the State Department of Health, through its parish health units and the four Polio Centers of the State, made every effort to obtain 3 stool specimens for virus isolation studies and paired bloods for serology from each reported case of poliomyelitis and from April 18 until September every effort was made to

have the contacts of reported cases submit stool and blood specimens for the same purpose. An epidemiological investigation has also been made on each person reported since April 18, 1955, as having poliomyelitis to be certain that if vaccine related cases occur that responsible authorities may be alerted immediately.

The National Foundation for Infantile Paralysis poliomyelitis vaccination program administered in Louisiana by the State Department of Health terminated September 30. The Department's present program of poliomyelitis vaccination carried out with vaccine purchased with funds made available through the Public Health Service by Congress commenced October 1, but vaccinations under this program did not begin until the vaccine arrived on October 18. From then until the end of October, 268 persons received first injections of vaccine and 8 second injections of vaccine. In November, 5506 received first injections, 2377 second, and 18 third injections of poliomyelitis vaccine.

With cessation of the N.F.I.P. vaccination program, the Department of Health was relieved of its responsibility for mass immunizations. Planning meetings, started as soon as it became obvious that federal funds would be available to the Department for the purchase of poliomyelitis vaccine, resulted in an intensive study of the whole program, past and future. The study committee recommended, and the State Health Officer approved, that in the future poliomyelitis vaccination be made a part of the regular, routine immunization program of the Department. This was done and all poliomyelitis vaccinations in the State program are now offered through the usual channels of the parish health units to those persons who usually avail themselves of these services.

The demand for vaccination is steadily increasing, but every effort should be exerted to have as many persons immunized against poliomyelitis as quickly as possible to provide the greatest amount of protection against the approaching 1956 poliomyelitis season.

To this end, the State Health Officer requested the State Poliomyelitis Committee, composed of Doctors C. Grenes Cole, Philip H. Jones, Will Barker, and Max Miller, representing the Louisiana State Medical Society and Doctors George H. Hauser, Ben Freedman, Andrew Hedmeg and J. D. Martin, representing the State Department of Health, to meet with him on Wednesday, January 4, 1956, to consider the possibility of stimulating greater use of the vaccine.

The Committee suggested that

1. The priority age group of eligibles for vaccination be extended to include all persons 20 years of age and less and all pregnant women.

2. The profession be advised that poliomyelitis vaccine is freely available through the usual commercial channels and from parish health units, as under previously existing regulations.

3. The medical profession and the parish health units cooperate in developing plans to increase use of the vaccine.

SUMMARY

The experience of the Louisiana State Department of Health indicates that poliomyelitis vaccination is effective in the prevention of poliomyelitis and in decreasing the severity of the disease when it occurs.

Since the vaccine contributes to the prevention of the crippling effects and the occurrence of poliomyelitis, it is suggested that every effort be made to immunize all persons eligible for vaccination as soon as possible.

MEDICAL MANAGEMENT OF ACUTE RENAL FAILURE *

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In the past decade there has been a complete revision of therapy of acute renal failure. This change has resulted from a better understanding of the pathology

* Presented at the Seventy-fifth Annual Meeting of the Louisiana State Medical Society, May 4, 1955, New Orleans.

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and clinical course of this disease. Up until World War II, very few articles were published concerning the nature and treatment of this syndrome. In the past five years almost every medical journal has carried one or two papers reviewing the literature and relating personal experiences. The placement of the artificial kidney in various medical centers has greatly influenced the interest in this syndrome. It has made physicians more and more conscious of its possible development and of its therapy when present. Proper therapy is essential as this is a disease for which one can do too much with resulting death from mismanagement.

For simplification, the term acute renal failure has been designated when there is rapid but only temporary loss of renal excretory function. Known etiologies of this disease are innumerable with a few of the more important and common ones listed in Table 1. Many other terms have

TABLE 1
CONDITIONS PRECIPITATING ACUTE RENAL FAILURE

Crushing injuries
Battle wounds
Major abdominal surgery
Burns
Retroplacental hemorrhage
Eclampsia
Blood transfusion reactions
Intravascular hemolysis of unknown etiology
Infections
Intravascular hemolysis following irrigation of bladder during transurethral resection
Mushroom poisoning
Chemical poison: C Cl_4, arsenicals, Hg, etc.
Anaphylactic shock
Sulfonamide reaction

been used for this condition and are shown in Table 2. Though some may be specific in etiology, the resulting pathological picture remains the same regardless of cause. The clinical course and prognosis, however, may be greatly influenced by the event responsible for the onset of this syndrome. This will unfold as the discussion continues.

PATHOLOGICAL FINDINGS

The pathogenesis of this disease has never been completely understood, but

TABLE 2
TERMS USED FOR ACUTE RENAL RAILURE

Lower nephron nephrosis
Acute tubular necrosis
Acute renal tubular failure
Shock kidney
Traumatic uremia
Transfusion kidney
Crush syndrome
Hepatorenal syndrome
Toxic nephrosis
Burn nephritis

appears to be related to reduction of renal blood flow with resulting ischemia and necrosis of tissue. The pathologist recognizes the condition by the gross appearance of a slightly enlarged kidney accompanied by a pale swollen cortex. Microscopically, he finds pigment and hyaline casts in the lower parts of the nephron and necrosis of the epithelium of any part of the tubule. The injury is most constant and usually most severe in the lower segments of the nephron. Necrosis is almost entirely confined to epithelium thereby making the process reparable. Regeneration of tubular epithelium is rapid and can be seen in some cases as early as the fourth day.

CLINICAL PICTURE

For therapeutic reasons, the clinical picture is usually divided into three periods consisting of shock, oliguria, and diuresis. There is marked variation in duration and severity of these stages and not all cases of acute renal failure present a picture of shock.

The stage of shock when present, is readily recognized and presents with its usual features. The stage of oliguria, however, is quite complex and is frequently missed for days following its onset. For this reason, I have elected to spend time on discussion of this phase in regard to its recognition, confusing aspects, and differential diagnosis.

Oliguria has been arbitrarily defined as existing when the urinary output is 400 cc. or less for a twenty-four hour period. Usually the output for the first three or four days is 100 cc. or less, but occasional cases are seen, in which the output never falls below 400 cc. per day. Other cases,

such as exposure to nephrotoxic chemicals, and occasionally, in association with acute hepatic failure, show a characteristic delay in onset of oliguria. In carbon tetrachloride intoxication, oliguria frequently has not developed for three or four days following exposure.

Complete anuria lasting for three or four days is a rarity in this syndrome. In its presence, cases must be evaluated very carefully and the possibility of either urinary tract obstruction or primary renal disease, such as acute glomerulonephritis has to be strongly considered. This is extremely important in cases following lower abdominal surgery in which damage or ligation of the ureters may have occurred. Passage of an ureteral catheter up one ureter will rule out an obstruction.

The oliguria usually lasts on an average of ten to twelve days, but there are cases lasting as long as three weeks. Cases going beyond this three week period are likely to be associated with other types of renal or urological disease.

Certain urinary abnormalities have been observed during the oliguric phase and may aid in its recognition. Initially the urine may be grossly bloody, dark red, or brown. Proteinuria is heavy at the onset but diminishes with progression of the disease. A specific gravity of 1.020 is not uncommon initially, but rapidly approaches 1.010 as the disease continues. Granular casts, broad casts, red cells and white cells are usually found on microscopic examination.

Early recognition of the oliguric phase is of prime importance; in the past, overtreatment has frequently occurred before the picture of oliguria and acute renal failure has been recognized. Being aware of its possible development is the best means for prevention of this tragedy.

THERAPY

Before discussing therapy of this syndrome, it must be realized that patients who have this condition as a result of difficult and prolonged surgery, or as a result of severe trauma, fall into a different clinical category than the previously healthy individual who has the syndrome as a result of mismatched blood or a nephrotoxic poison. To the latter patient, azotemia and acidosis may be of little consequence; whereas to the former it may be extremely hazardous. The mortality rate in these patients even with all forms of therapy is still very high; too often it is not realized that these patients frequently die even in the absence of acute renal failure.

Therapy is handled on a day to day basis and frequently necessitates changes over hourly periods. Each period is treated accordingly and is influenced by the degree and severity of the stage.

The first stage or period of shock is usually related to blood loss, sepsis, or trauma in its many forms. Proper and immediate treatment at this time is the most effective manner of preventing the onset of this syndrome. Properly matched fresh whole blood continues to be the fluid of choice in therapy of blood loss. In cases of severe hemolysis, freshly washed red cells, that have been properly matched by the Coomb's method, can be used. This obviates the danger of overloading the patient when fluid restriction is indicated. Alkalinization of the urine in transfusion reactions and intravascular hemolysis is no longer adhered to, and can be dangerous in the presence of anuria and oliguria.

All injuries are cared for immediately. If amputation is indicated then it should be done as soon as the patient can withstand surgery. Until surgery is possible, the involved extremity should be packed in ice in order to decrease absorption of toxic products and liberated potassium. Antibiotics should be used in liberal quantities for control of infection. Care must be exercised, however, in the administration of large quantities of streptomycin in the presence of prolonged oliguria.

The oliguric phase requires more prolonged and complex management. The most common cause of death in this phase is cardiac failure. This occurs either through overhydration or potassium intoxication. For its prevention, certain rig-

id principles are followed.

An accurate intake and output must be recorded, even if it necessitates an indwelling catheter. All fluid loss from vomiting, gastric suction, diarrhea, and draining sinuses or fistulae should be measured as accurately as possible. The latter two are frequently quite large and not evident unless some means are taken for their measurement.

If feasible, daily weight readings are obtained. This affords the best means of determining water retention that occurs not only from exogenous sources, but from tissue breakdown as well.

Fluid is restricted in quantities sufficient to maintain a constant daily weight; some observers are even in favor of obtaining slight weight reduction. To accomplish this, fluid intake is limited to insensible loss from sweating and respiration plus the amount of measurable loss. The amount of insensible loss will vary with presence of fever and the degree of sweating. Usually no more than 700 to 1000 cc. is required for replacement. It is far better to err on the low side than to administer an excess.

Caloric intake should be at least 400 calories daily in the form of carbohydrate or fat. If nourishment can be taken by mouth, then this affords the easiest and best method for administration. A diet free of sodium, potassium, and protein is used; glucose, peanut oil, salt free butter, and cooked rice can be served and prepared in various manners. Feedings are divided and taken throughout the day rather than in one or two servings. Once vomiting ensues then intravenous fluids is the only means of feeding. In order to maintain caloric intake and at the same time restrict fluids, hypertonic glucose solutions must be used. At the present time research is being done on intravenous fat but has not been approved or advocated.

Thorazine has been used with some success in the control of nausea and vomiting. Complicating factors, such as jaundice and hypotension have been extremely uncommon in our hands and certainly has warranted the risk of its use.

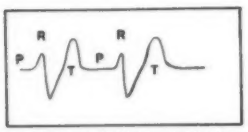
The serum electrolytes and chemistries undergo a marked change in the oliguric phase. These changes are variable and to a large degree depend upon the initiating event. A fall in serum sodium concentration is seen in almost all cases. The nature of its fall is not clear but appears to be related to one of three factors or possibly a combination of all three. These factors are presumed to be (1) shift of sodium from the extracellular to the intracellular fluid, (2) shift of H_2O from the intracellular compartment to the extracellular compartment and, (3) dilution of the inorganic ions in body fluids by excess water administration. Although some advocate the administration of hypertonic saline for correction, most workers are in agreement that NaCl administration is not necessary and can easily result in cardiac failure and cerebral edema. If a need is felt for correction then this is best obtained by further water restriction. A correlation between weight reduction and rising sodium levels has been shown in this syndrome. If sodium is lost, however, in considerable amounts by way of gastric suction or draining sinuses, then its replacement by hypertonic saline is required.

Unlike sodium, serum potassium tends to rise during the oliguric phase. The danger of potassium intoxication is greatest among those individuals who have crush injuries, received multiple transfusions with old blood or in whom infection is present. Potassium intoxication results in cardiac arrhythmias and standstill. Both serum K levels and serial electrocardiograms are taken for following the possibility of this development. Although there frequently is little correlation between the electrocardiogram and serum potassium, the electrocardiogram remains of great clinical importance. Its findings rest not only in the serum K levels but also on total ionic concentrations and their resulting antagonisms. Electrocardiographic findings in both early and late stages of potassium intoxication are shown

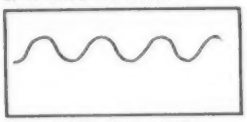
in Figure 1. Several methods for preventing a rise in serum K^+ have been mentioned previously. This includes treatment of infection and injuries early in the disease, use of fresh blood for blood loss, administration of adequate calories to prevent tissue breakdown and withholding all K in the diet or fluids.

Some workers have used exchange resins administered either orally or by rectum to combat rising K^+ levels. By rectum it is given as the carboxylic NH_3 resin twice daily as a 10 per cent suspension in 250

EARLY—HIGH PEAKED T WAVE



LATE—LOW P WAVE—WIDE QRS; ST SEGMENT DEPRESSION LOWERING OF R WAVE AMPLITUDE



VERY LATE—SINE WAVE

EKG FINDINGS WITH POTASSIUM INTOXICATION
Figure 1

cc. of H_2O. It has been reported that as much as 70 mEq. K per day has been removed in this manner. Should the K^+ rise in spite of all measures, then the artificial kidney is by far the most effective means for removal. Cases requiring this procedure, who are seen for the first time with evidence of late K^+ intoxication on the electrocardiogram, frequently may be given a few hours of safety with reversal of the electrocardiographic findings, by the administration of hypertonic glucose and insulin. It is used in the ratio of 3 gms. of glucose to 1 unit of insulin. This temporarily succeeds in lowering the serum K^+ through glycogen formation and storage. Ca^{++} and Na^+ have also been used for their antagonistic effects to K^+, but their degree and duration of effect is much less than glucose and insulin. Once the urinary tract output exceeds 500 cc. per day, then the handling of K^+ excretion is usually adequate and causes little concern.

During the development of azotemia during the oliguric phase, there is usually progressive lowering of the CO_2 combining power. Unless this is severe or the patient is critically ill, then the acidosis is usually fairly well tolerated and requires no correction. Should correction be necessary, then NaR lactate or $NaHCO_3$ is administered slowly and cautiously.

Hypocalcemia is often present, but not to the same extreme as seen in chronic renal insufficiency; tetany has only rarely been observed. No therapy is usually required for the hypocalcemia.

A rapidly progressing anemia is present in almost all cases. The anemia is not completely understood but at present seems best explained on a shortened life cycle of the red cell. Once the hematocrit reaches a level of 18 to 20, then it appears to level off and remain at this value. Most patients appear to tolerate this level very well. Repeated transfusions seldom cause any significant rise in the hematocrit and frequently result in cardiac failure.

Throughout the oliguric phase, careful attention must be paid to the pulmonary and vascular systems. Too often older patients are maintained through the oliguric phase only to die from a complicating bronchopneumonia or pulmonary embolus. Nursing care in these patients is as important as any other phase of treatment.

Once the urinary output exceeds 500 cc. daily then there is a rapid increase in the day to day output. This period is now known as the diuretic phase. For the first few days after this onset, there may be noticed no improvement in the clinical or chemical picture. There actually may occur further increase in the azotemia and degree of acidosis. Within a few days, however, there is noted marked clinical and laboratory improvement. At this time diuresis may be profound with the volume

reaching as high as 4000 to 5000 cc. daily or more. This occurs even though there may be restriction of H_2O intake. With this diuresis there may be a marked depletion of electrolytes. During this phase both fluid and electrolyte administration must be adequate.

Once recovery is attained, then there is complete recovery of renal excretory function. This as well as the correction of the anemia may take three to six months following recovery from the oliguric phase. Marked tissue loss with resulting weakness in older patients may also take months for replacement and repair.

Little mention has been made of the artificial kidney. In many cases, especially in those associated with trauma, medical management alone is not sufficient and the artificial kidney has to be used. Unfortunately, this procedure does not guarantee eventual recovery in all cases: There still remains a high mortality rate in these cases, which is associated with the initiating factors and not the procedure.

SUMMARY

In summary the following have been stressed:

1. Prompt recognition of the disease with early institution of therapy.
2. Fluid restriction with adequate caloric intake.
3. Use of Na, K, protein free diets.
4. Recognition, prevention and treatment of K^+ intoxication.
5. Excellent nursing care.
6. Adequate fluid and electrolyte administration during the diuretic phase.

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EXPERIENCES WITH PELVIC ENDOMETRIOSIS; REVIEW OF PRIVATE CASES AND PATIENTS AT THE CHARITY HOSPITAL OF LOUISIANA AT NEW ORLEANS *

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Pelvic endometriosis is a serious disease whose incidence is increasing. In comparatively recent times it has become the greatest threat to normal reproductive function that the modern young woman has to contend with.

This is especially true of the young white woman with "advantages" economically and socially. The girl who pursues her education and cultural interests a bit longer and who, therefore, is married a bit later. Or the girl who marries the young professional man with extra years of preparation ahead of him—and pregnancy is deferred. In fact it is true that we as physicians not infrequently must face the toll brought about by endometriosis in our own wives and daughters.

Tyrone and Weed [1] have suggested that the modern tense living of "emancipated woman" bringing about stress may be the forerunner to this condition. Does this cause hormone imbalance, especially of adrenal cortical secretions which sets off the development of ectopic endometrium?

In spite of the several attractive theories advanced, no one seems to be entirely adequate to explain the etiology of this condition.

MATERIAL

This presentation deals only with external pelvic endometriosis which may be

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defined as the presence of endometrial tissue outside of the uterus which is indistinguishable in its microscopic appearance from that found within the endometrial cavity. Our study is based on experiences gained in private practice (M. L. McC) and from a review of all cases of external endometriosis encountered at the Charity Hospital of Louisiana at New Orleans, from January 1, 1939 to December 31, 1953.

In the latter institution there were only 133 patients with proven diagnosis of endometriosis at operation over the fifteen year period studied. Sixty-seven of these were colored and 66 were white. While the total number of laparotomies at this hospital is unknown, some idea of incidence may be gathered from the number of out-patient clinic visits and total admissions to the hospital wards. There were 416,113 visits to the gynecological clinics, 293,460 colored and 122,653 white, from the beginning of 1939 to the end of 1953. Thus, there was 1 case of proven endometriosis for each 4380 clinic visits in the colored and 1 case for each 1858 in the white. During the same period there were 58,427 admissions to the gynecological wards, 36,227 colored and 22,200 white. Of these 1 out of each 541 colored patients (0.18 per cent) and 1 out of each 336 white patients (0.3 per cent) were found to have external pelvic endometriosis.

In the senior author's private practice from January 1, 1944 to December 31, 1953, there were 1018 major gynecological operations, of which 580 were laparotomies. Ninety-two patients (all white), representing 16 per cent of those having laparotomy, had pathologically proven external endometriosis. This incidence is lower than that reported by some; (Meigs[2] found endometriosis in 32 per cent and Sampson[3] in almost 22 per cent of their patients) but in this series there was an unknown number of individuals with very suggestive symptoms and findings of the disease who either became pregnant within a reasonable period of time or whose lesions were nonprogressive and who therefore were not operated upon.

These statistics emphasize the dearth of patients with this disease on a large charity hospital service. It also reiterates the relative infrequency of endometriosis in the American negro, as has been so well described in the excellent report by Weed.[4]

AGE INCIDENCE

Twenty-seven per cent of the patients in the private group required surgery before the age of 30 years and 4 per cent were operated upon after 50. In the Charity group 36 per cent came to surgery by the age of 50 years and only 1 patient with external endometriosis in the entire fifteen year series was operated upon after the age of 50 years.

LOCATION OF ENDOMETRIAL LESIONS

The relative distribution of lesions in the private patient group is shown in Figure 1. The posterior cul-de-sac area including uterosacral ligaments were involved slightly more often than the ovaries.

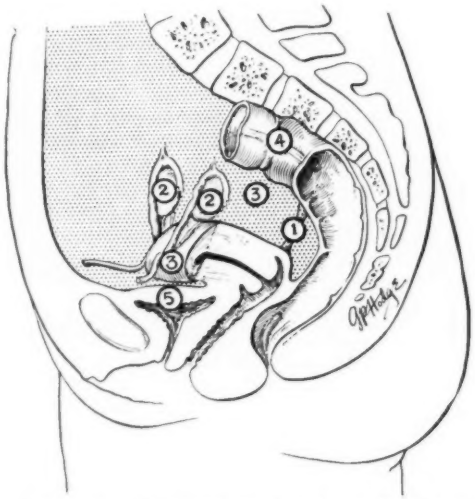

Figure 1. Distribution of pelvic endometriosis in private patient group.

In the Charity group of patients (Table 1) the ovaries were involved most frequently in both white and colored but only slightly more often that the peritoneal surfaces. Cul-de-sac lesions were not described as commonly in the Charity

TABLE 1
EXTERNAL ENDOMETRIOSIS
CHARITY HOSPITAL
1939 - 1953

Sites	White	Colored
Ovaries	42 (61%)	40 (61%)
Cul-de-sac	15 (22%)	26 (39%)
Parietal & Serosal Surfaces	40 (60%)	39 (59%)
Bowel (Rectum & Sigmoid)	3 (4%)	14 (21%)

group as in the private group. The lower bowel was involved five times as frequently in the white as in the colored. Bladder endometriosis was encountered only once in fifteen years in the Charity series, whereas extensive bladder involvement was present in 6 of 92 private patients.

SYMPTOMS

Symptoms listed in order of their relative frequency in the private patient group were:

1. Increasing dysmenorrhea
2. Dyspareunia
3. Infertility
4. Abnormal uterine bleeding
5. Lower abdominal pain
6. Rectal pain (change of bowel habit)
7. Backache
8. Urinary symptoms

It is evident that the significant triumvirate of symptoms is *pain, bleeding,* and *infertility.* Table 2 points out the incidence of these symptoms in the private group as well as in the white and colored Charity cases. The increasing infertility in the colored Charity group is probably due to the greater incidence of chronic pelvic inflammatory disease. Only 7 per cent of the colored cases had no symptoms when endometriosis was found. It is our impression that this may be related to the fact that they have more associated pathology and seldom come for medical aid until there is comparatively far advanced disease and definite symptoms are present.

TABLE 2
SYMPTOMS

	Private		Charity			
			White		Colored	
	No. Cases	%	No. Cases	%	No. Cases	%
Pain	72	78	55	83	54	81
Bleeding	49	53	25	38	34	50
Infertility	51	55	36	56	47	70
None	14	15	8	12	5	7

The fact that 15 per cent of the private and 12 per cent of the charity white patients had no symptomatology in association with endometriosis is notable. Many of these had extensive lesions and were surprise findings at laparotomy.

ASSOCIATED PELVIC PATHOLOGY

It is commonly believed that about 20 per cent of women have congenital retrodisplacement of the uterus. In private patients with external endometriosis 41 per cent had uterine retroversion. Thirty-three per cent of white Charity patients had this accompanying condition; whereas only 4 per cent of colored patients had retroversion of the uterus noted on their charts.

Table 3 reveals that much more associated pelvic pathology was present in colored patients with external pelvic endometriosis than in the white. Thirty-six per cent of the former had myoma uteri while only 18 per cent of the white Charity patients had such tumors. Twenty per cent of the private group had myomata but most of these were of insignificant size. No pelvic inflammatory disease was noted in the private patients; whereas in the white Charity group 17 per cent had pelvic inflammation, 6 per cent of whom had accompanying myoma uteri. In contrast, 57 per cent of colored patients had pelvic inflammatory disease, 45 per cent of whom also had fibroids.

TABLE 3
ENDOMETRIOSIS
CHARITY HOSPITAL
1939 - 1953

Accompanying Pathology	Colored	White
Uterine Retroversion	3 (4%)	22 (33%)
Myoma	24 (36%)	12 (18%)
Myomata and Chronic Salpingitis	30 (45%)	4 (6%)
Pelvic Inflammatory Disease	8 (12%)	7 (11%)

DIAGNOSIS

The specific diagnosis of pelvic endo-

metriosis can only be made at operation. Preoperative diagnosis is usually difficult. Nodularity in the region of the posterior cul-de-sac and uterosacral ligaments on rectovaginal palpation is most characteristic. This may or may not be associated with adherent retrodisplacement of the uterus. A fixed adnexal tumor mass such as is caused by an endometrial cyst of the ovary is a suggestive finding but other types of ovarian neoplasia cannot be excluded. Inasmuch as chocolate cysts of the ovary rarely attain the size of other common ovarian tumors, the presence of palpable abdominal tumor due to endometriosis is unusual.

Eighty-two per cent of private patients with endometriosis were suspected of having the disease and in 18 per cent the diagnosis was missed. On the other hand, only 15 per cent of charity cases with this condition were suspected of having it before laparotomy was performed. This discrepancy between the two groups may be due to the great amount of other pelvic pathology present in the charity cases as well as the increased index of suspicion which is bound to be developed in private practice.

THERAPY CARRIED OUT

Only patients with proven diagnosis of external pelvic endometriosis are included in this study so that all had some type of surgery.

Eighty-one per cent of charity cases had abdominal hysterectomy and removal of ovarian tissue, while 19 per cent had some conservative operation. On the other hand, 27 per cent of private patients had conservative surgery. Of those in the private group who had extensive pelvic surgery, 42 per cent had had previous conservative procedures done for endometriosis. Only 0.67 per cent had previous pelvic surgery for endometriosis in the charity series.

DISCUSSION OF MANAGEMENT

Our own approach to the management of pelvic external endometriosis is in agreement with that of Gardner [5] and includes the following:

1. Watchful waiting
2. Hormonal
3. Irradiation
4. Surgery

The approach should be individualized in each case.

Watchful Waiting. — In our experience there is a group of very young patients who may be managed successfully by merely following them carefully, urging early marriage and pregnancy. This includes those about to be married, recently married or those only lately attempting to become pregnant whose findings on palpation are minimal. Pregnancy is undoubtedly the best conservative therapy available and these patients may safely be given a chance to prove themselves along this line if they are followed every two or three months with careful pelvic examination. If pelvic lesions enlarge and symptoms worsen, *or* if infertility without other demonstrable cause is established after eighteen to twenty-four months of effort, laparotomy is carried out. Although we have no statistics available to present, we have been impressed how often these patients will become pregnant. It is in this group that hormonal therapy is frequently used but we must be wary of crediting the medication with the successes obtained.

In older patients, especially those in the premenopausal period, the development of nodularity in the posterior cul-de-sac precludes any approach but surgery in our opinion because of the greater likelihood of the development of ovarian carcinoma in this age group.

Hormone Therapy. — Both androgenic and estrogenic therapy have been used with some success for pelvic endometriosis, although at the present time the use of endocrines must be looked upon as a temporary approach.

Methyl testosterone by mouth 10 mg. per day (not exceeding 300 mg. per month) will aid many patients symptomatically, but very few with extensive lesions will respond favorably in our experience. This regime may be used for four to six months and repeated after three or four months. The greatest bene-

fit of such therapy is the lessening of dysmenorrhea in patients with minimal findings. The smaller dosage of 160 mg. given 20 mg. per day from the sixth to the fourteenth day of the cycle will allay the pain in some of the milder cases just as it will in primary dysmenorrhea. Signs of masculinization should be carefully watched for since they sometimes occur even with comparatively small dosage.

Karnaky [6] and a few others have reported good results with large doses of stilbestrol so as to depress ovulation and menstruation for from four to six months. Very large doses of the substance must be used to bring this about and a regime which space does not permit us to repeat has been outlined. Occasionally, a patient will become pregnant immediately after the cessation of such treatment. Our experience with this approach has not been a broad one and on a few occasions there have been exacerbation of symptoms, enlargement of lesions and prolonged uterine bleeding immediately following the termination of this therapy.

Irradiation Therapy. — Except for the rare patient who refuses surgery we have limited the use of irradiation therapy to individuals who have had previous surgery and, at a late age, have recurrence of small lesions giving rise to significant symptoms. Surgery is usually better therapy, for it rules out malignancy and adjusts accompanying pathology such as marked adhesions which may cause serious difficulty in the future even though the patient is castrated.

Surgery. — Finally, in our opinion, surgery is the type of therapy most often called for when a significant degree of progressing external endometriosis is suspected. *Conservative surgery* is not only justified but definitely indicated in the presence of pelvic endometriosis of significant degree for the sake of childbearing. This type of surgery should aim to bring about excision or obliteration of as much of the disease as possible, as well as alleviation of symptoms, while preserving reproductive potential.

Before such surgery is performed, however, the patient and her husband should be thoroughly studied in order to determine other causes of infertility. The failure to carry out such an investigation preoperatively has all too often resulted in predestined disappointment and the withholding of better indicated surgical procedures. The husband should be examined and have his semen evaluated. The patient should be checked to make certain she ovulates properly by studying endometrial biopsy and basal temperature charts. Patency of the Fallopian tubes must be determined by Rubin test, or better, by hysterosalpingography which also provides valuable information concerning the endometrial cavity and the uterus itself, especially in regard to tumors or congenital malformations. We feel strongly that this procedure should be an integral part of preoperative study when conservative surgery for endometriosis is contemplated. All cervical abnormalities such as infection and stenosis should be cleared up and, if there has been abnormal uterine bleeding, it is wise to precede laparotomy with dilatation of the cervix and curettment of the endometrial cavity.

Even though all of these studies have been carried out and there seems to be no reason for infertility other than the endometriosis present, the final decision as to whether the conservative approach may be adhered to depends finally upon what is revealed when the abdomen is open. First, adhesions should be lysed and lesions excised from the ovaries so as to leave only normal tissue while making as certain as possible that the fimbriated ends of tubes are free and mobile enough to come into close contact with the ovaries.

The blueberry spots and puckered fibrotic lesions so frequently encountered in the posterior cul-de-sac, along the uterosacral ligaments and over the peritoneal surfaces should be biopsied and, if there are but few, excised. When these lesions are widespread, it is better not to attempt complete excision because of the large areas completely denuded of peritoneum

which would result. For a number of years the senior author has split each small pathologic area with a scalpel before coagulating the interior of each half (using the coagulation current of the Bovie unit). (Fig. 2). In this way more complete destruction of the endometrioma is carried out. Recently Sturgis [7] has pointed out that the most painful lesions of external endometriosis are those encased in fibrous tissue. This concept gives us a more concrete reason for using the technique described which we have felt has given us much better symptomatic relief than other local procedures for the destruction of these tiny but highly significant pathologic areas.

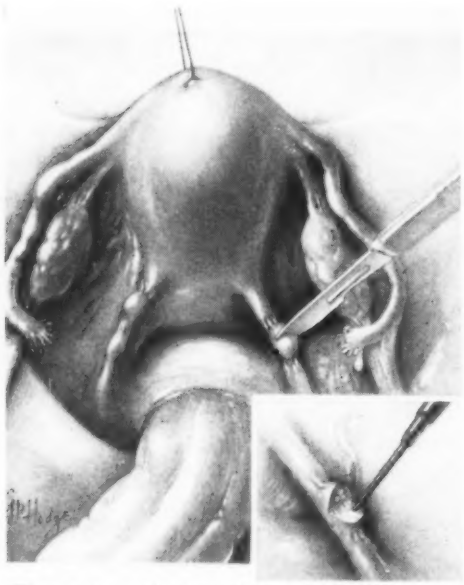

Figure 2. Splitting with scalpel of small endometrial lesions following which the endometrial cores of each half are coagulated.

Uterine suspension is done whenever the uterus is retrodisplaced. The subperitoneal Baldy Webster operation [8] is used with excellent results. A modification of this procedure is especially suited for those cases where one adnexa is removed and the round ligament is utilized to peritonealize the cornual area (Figure 3). Other techniques frequently bring about torsion or an abnormal pull upward on one side of the uterus.

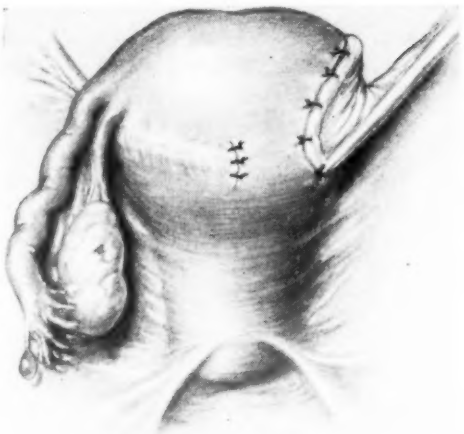

Figure 3. Unilateral subperitoneal Baldy-Webster operation for suspension of uterus after removal of one adnexa.

It is important to have evaluated the type and distribution of pain before conservative surgery is done. If severe midline dysmenorrhea has been present, presacral neurectomy should be carried out. If there is unilateral pain in the region of an ovary, the infundibulopelvic ligament of that side should be divided (ovarian neurectomy). When dyspareunia has been severe, division of the uterosacral ligaments interrupting branches of the pelvic nerve may provide relief.

We believe that well planned conservative surgical measures will relieve the symptoms of most patients and provide a better opportunity for pregnancy to occur. Twenty-seven per cent of private cases were treated in this manner and 24 per cent became pregnant within two years. In the charity series 19 per cent had some conservative procedure and 6 per cent became pregnant within four years. The patient and her family should be told that further pelvic surgery may be necessary later. That such conservative procedures are indicated, however, seems obvious when 1 out of 4 of private patients conceived within a comparatively short period of time, whereas it has been estimated by others that not more than

15 per cent will need subsequent surgery.

When reproductive function cannot be saved, panhysterectomy should be carried out. If all apparent endometriosis can be removed, some normal ovarian tissue may be saved with reasonable safety at the time of hysterectomy in premenopausal patients. It has been stated that 4 to 5[9] per cent of these cases will have recurrences calling for further surgery or irradiation. Definitive cure of external endometriosis and its complications, however, may be brought about by panhysterectomy *and* the removal of *all* ovarian tissue.

SUMMARY

1. Experiences with external pelvic endometriosis in private practice and in white and colored charity patients are compared from the standpoint of incidence, age, location of lesions, symptoms, associated pelvic pathology, diagnosis and treatment.

2. Several approaches to the management of this disease are taken up from the practical point of view.

3. The value of conservative surgery is stressed and certain new points in technique are described.

4. The importance of complete infertility study of the patient and her husband before conservative surgery is done is emphasized.

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THERAPEUTIC ACHIEVEMENTS IN AMEBIASIS *

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Amebiasis no longer presents the prevalence, grave prognosis, or therapeutic resistance accredited to the disease in this country early during the present century.

INCIDENCE

In 1923, Craig[1] estimated that 10 per cent of our population was parasitized with *Endamoeba histolytica*. A survey by one of us (G. M.), in 1953, revealed a cosmopolitan distribution of amebiasis but a lower incidence of 3.7 per cent, attributable largely to improved water supply.[2] Contamination of drinking water by sewage accounted for two epidemics in the United States, one in Chicago, Illinois, in 1933, and the other in South Bend, Indiana in 1953.[3] Unsanitary food handling and transfer of fomites probably accounts for the high institutional, military, and rural occurrence, which is far in excess of that estimated for the general population.

MORTALITY AND MORBIDITY

Fatalities due to untreated amebiasis or its complications, primarily in unrecognized cases, are still recorded.[4-6] Greater awareness on the part of physicians, as well as improved diagnostic aids and therapeutic results, have reduced the morbidity through intelligent, complete eradication of the parasite whenever it is detected. Faust[7] indicted the term "carrier state" so strenuously that most parasitized persons are now adequately managed, precluding transformation of this state into symptomatic colitis and the dreaded hepatic complications. Whereas the State

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Boards of Health obviously cannot obtain accurate statistics on incidence, death and and its cause are inseparable, and the mortality figures are therefore valid. In Louisiana, 83 deaths have been accredited to amebiasis during the decade 1944-1953, as compared to 241,868 deaths from all causes (a ratio of 1 to 2914), indicating the low incidence of fatalities from this disease.

FACTORS INFLUENCING THERAPEUTIC RESPONSE

Analysis of the extremes in therapeutic achievement suggests variance in susceptibility of parasitic strains and in severity of the disease, inconsistency and inadequacy of follow-up examinations, and lack of understanding of the proper management of the disease in its various phases. Our study has revealed an extremely low incidence of intractability.[8, 9] The assumption of therapeutic resistance is possibly explainable on two bases: (1) inadequate therapy and (2) incorrect diagnosis. Inadequate treatment characterized the therapeutic history in 152 of 238 patients labeled intractable. The question of incorrect diagnosis cannot be established, but lack of any sustained therapeutic response during treatment and incompleteness of diagnostic survey were suspected in 86 of these patients considered refractory to treatment. Technical accuracy in certain segregated laboratory diagnostic groups with unusually high prevalence of intractable amebiasis is subject to suspicion, especially when meticulous studies elsewhere on the same individuals fail to confirm the original diagnosis but identify these subjects instead as wandering psychosomatic patients. It is distressing that no simple diagnostic test has proved sufficiently accurate to rule out the pathogenicity of organisms or objects labeled *E. histolytica*. If all cases of so-called intractable amebiasis were confirmed by iron hematoxylin staining study of the causative organisms, then the diagnosis could be considered established. The simplified staining method of Suter and Vaughan is recommended.

Additional factors that may have altered the status of clinical amebiasis are extensive use of the wide spectrum antibiotic agents, which have been accredited direct or indirect amebacidal efficiency in the management of all infectious diseases, and the tendency toward empiric treatment of all patients suspected of having amebiasis. No definite conclusion regarding the influence of the antibiotic drugs is justified, for the amount administered has frequently been insufficient to effect amebacidal action. In fact, it has been suggested that sublethal doses enhance the virulence of *E. histolytica*. On the other hand, empiric treatment of all patients suspected of having amebiasis seems to be a definite contributory factor. In a survey of 3,760 physicians interviewed at our exhibit on "Antibiotic Amebacides" at the meeting of the American Medical Association in 1954, 3,252 (86.5 per cent) admitted this practice. In our personal survey in 1954, 56 patients with one or more of the clinical manifestations, radiologic interpretations, or proctosigmoidoscopic picture of amebiasis, but without actual demonstration of *E. histolytica*, have responded to amebicidal therapy. In the same period, we have surveyed 108 cases similarly diagnostically impressive of amebiasis, but again without isolation of *E. histolytica*, with no response to antiamebic measures. A presumptive diagnosis of amebiasis may justifiably be entertained if the clinical picture is compatible and the therapeutic response is prompt and complete. However, many amebacides, by virtue of iodine, arsenic, and bismuth content, as well as antibacterial influence, are effective in the management of colonic hypersecretory, hypermotile, and inflammatory states. Furthermore, bacterial, nonbacterial, and functional colonic disturbances are prone to spontaneous remission.

TREATMENT

The therapy of amebiasis must satisfy three requisites: (1) symptomatic relief, (2) curative promise, and (3) supportive adjunct. Because of complex factors associated with parasitization in some in-

stances, no one amebacidal agent has as yet been established as an infallible amebacide. Treatment of each patient, therefore, must be individualized according to the demands of the case, i.e., specific physical status, severity of manifestations, duration of involvement, and extent of tissue invasion.

In reviewing the publications on newer amebacides, one must be aware, as expounded by Hamilton,[10] of the pragmatic problem of treating the individual parasitized patient with an established therapeutic regimen as well as of the independent, experimental problem involving new amebacides. Hamilton,[10] stated: "In choosing drugs for therapy, it is fair to state that one drug is not necessarily superior to another. The choice will be based on a number of factors, such as the relative toxicity, the specific response of patient, the cost of drug, the desirability of ambulatory treatment, and the physician's experience with a compound."—a statement of fact that the thearapist must not ignore.

Laboratory evaluation alone of an amebacide is not entirely satisfactory, since some agents that are ineffective on in vitro study are extremely efficient amebacides clinically. Animal experimentation is more useful in toxicologic and tolerance study than in evaluation of therapeutic efficacy because of certain influencing factors in human subjects, such as alteration in the drug, excitation of host resistance, and change in colonic flora. Estimates of efficacy are further hazardized by spontaneous cures, cyclic disappearance of amebae from the feces, and environmental contribution in the way of reinfection.

CLINICAL INVESTIGATIONS OF NEWER ANTIAMEBIC AGENTS

New agents are of interest to three groups of people: (1) the producer, (2) the research evaluator, and (3) the clinician. Marketing of a new, more efficient, and innocuous drug is the pharmaceutical aim, establishment of therapeutic status is the purpose of the research clinician, and proof of clinical efficacy depends on the practicing physician. The drugs presented herein have withstood preliminary studies and may soon be available to the practicing physician. Their future status will depend on continued clinical evaluation.

Antibiotic Amebacides.—Although antiamebic qualities have been accredited to many antibiotic agents, only Fumagillin and Oxytetracycline have established amebacidal efficacy, and this is limited to the intestinal phases of the disease.[11] The side effects of both are well recognized. The expensiveness of Oxytetracycline is an additional disadvantage. We have had no personal experience with Tetracycline, but its absorbability with diminished fecal concentration would indicate a therapeutic efficacy below that of Oxytetracycline.

We have evaluated two recently available presumed antibacterial antibiotic drugs, Erythromycin and Anisomycin. Erythromycin stearate,* in the opinion of Anderson and associates,[12] has excellent promise. Since it is well absorbed, with excellent hepatic and other tissue concentrations, it may represent a potentially omnipotent amebacide. We are now inclined to conclude that Erythromycin, 200 mg. administered four times daily for ten days, is an excellent conditioning agent in amebiasis, enhancing the effect of other amebacides, presumably by altering bacterial flora, but is not in itself a completely efficient amebacide. In a previous publication,[13] we reported Erythromycin stearate to be 82 per cent efficient when used alone and, when subsequently combined with another agent, Win 5047 (Mantomide †) in 26 patients, to have a combined efficacy of 96.2 per cent. Relative absence of side effects outweighed the disadvantage of expense of this drug.

Anisomycin (PA-106, Flagicidin ‡) has been introduced as antitrichomonal and

* Supplied by Abbott Laboratories, Research Division, N. Chicago, Ill.

† Supplied by Sterling-Winthrop Research Institute, Rensselaer, N. Y.

‡ Supplied by Charles Pfizer and Co., Antibiotic Division, Brooklyn, N. Y.

antiamebic in in vitro studies.[14, 15] Because it gave such promise in laboratory evaluation, clinical trial was enthusiastically sponsored. A dose of 10 mg. thrice daily for ten days was fairly well tolerated by 10 volunteers. Four of these experienced nausea, abdominal distention, and mild diarrhea. No hematologic, renal, or hepatic abnormality was encountered on laboratory study at the completion of testing. On therapeutic trial of 30 mg. of Anisomycin daily for ten days to 10 patients and 40 mg. daily to 6 patients, all parasitized with *E. histloytica*, this agent was curative in only 5 of the first group and 3 of the second group at a thirty day post-therapeutic survey. More recently, coated tablets have been used, permitting better tolerance of doses up to 60 mg. daily. Of 12 patients on a dosage schedule of 60 mg. for ten days, 1 showed persistent parasitization and 3 showed recurrence within thirty days; there were 2 additional recurrences at ninety days. All cases have been followed for hematologic, renal, and hepatic toxicity without any untoward reaction having been encountered. Nausea has been common to over 50 per cent of patients. More extensive trial on a dosage schedule of 60 mg. daily for ten days should be carried out to establish tolerance to Anisomycin and its efficacy as an amebacide.

Nonantibiotic Amebacides.—Of the nonantibiotic amebacides, we have hoped for an efficient nonmetallic agent that would eliminate the iodine and arsenical side effects. Our published work on Win 5047, indicating a therapeutic efficiency of 88 per cent, favors its continued trial.[16]

More recently, we have evaluated Win 12051,§ N-(2,4-dichlorobenzyl)-B-(2-ethoxyethyl) dichloroacetamide, introduced as a nonmetallic, nontoxic compound potent as an amebacide in both in vitro and animal experimentation.[16a] Absorption and excretory studies have demonstrated that it is approximately 80 per cent recoverable from the feces, indicating its lack of applicability in tissue phases of amebiasis. Our initial studies in 10 volunteer human subjects revealed that a dose of 4.5 Gm. administered daily for ten days was well tolerated, with no evidence of untoward renal, hematologic, or hepatic influence during the treatment period or for thirty days thereafter. Eighteen patients parasitized with *E. histolytica* were given 1.5 Gm. three times a day for ten days. Fecal, hematologic, renal, and hepatic studies were carried out upon completion of treatment and again twenty, thirty, and sixty days thereafter. There was no clinical or laboratory evidence of intolerance to this drug. All reports of fecal examinations were negative for *E. histolytica* at the tenth day of treatment and at twenty days. Amebae were isolated in 2 patients at the thirty day examination and in a third patient at the sixty day examination.

We now have under consideration an interesting combined metallic agent, *Triamar* ‖ (Diidohydroxyquinoline glycolylarsanilate) a combination of 60 per cent Diodoquin and 40 per cent glycolylarsanilic acid. A combination of two heavy metals, iodine and arsenic, it contains a smaller dose of iodine than found in Diodoquin and of arsenic than found in either Carbarsone or Milibis.[17] The recommended dose of one tablet four times daily contains 1200 mg. of Diodoquin daily combined with 222 mg. of arsenic. This drug represents an attempt to achieve a symbiotic influence of two proved amebacidal metals by use of a smaller fraction of each heavy metal, thus avoiding side effects but achieving enhanced amebacidal influence.

Ten normal male subjects were given 500 mg. of Triamar four times daily for ten days. Other than transient pruritus ani in 2 patients, no side effects were recognized. Renal, hematologic, hepatic, and electrocardiographic studies conducted on the tenth day of treatment and ten days thereafter, revealed no evidence of

§ Supplied by Sterling-Winthrop Research Institute, Rensselaer, N. Y.

‖ Supplied by Research Laboratories of Carroll Dunham Smith Pharmacal Co., New Brunswick, New Jersey.

toxic influence from the drug. Ten patients parasitized with *E. histolytica* were administered 500 mg. of this drug four times daily for ten days, and 4 others were given 1000 mg. four times daily for ten days. Fecal, renal, and hepatic studies performed on the tenth day of treatment and again twenty, thirty, and sixty days thereafter were all reported normal. The drug was tolerated well, although one patient had a mild transient vesicular dermatitis interpreted as iodine dermatitis. Fecal examination at the completion of treatment was reported negative in 13 patients, whereas *E. histolytica* was isolated from the stool of the fourteenth. At the twenty and thirty day re-examinations, stools of the first 13 patients were again normal. At the sixty day examinations, *E. histolytica* was found in the stools of 3 additional patients. None of the 4 patients given 1000 mg. of the drug four times a day for ten days showed evidence of recurrence of *E. histolytica*.

THERAPEUTIC REGIMEN

Tried and proved methods herein outlined should, in our opinion, unquestionably be incorporated in the management of the patient parasitized with *E. histolytica* when individualization permits classification into a type of involvement.

Acute amebic dysentery is manifested as acute diarrheic hypermotility initially, followed in a few days by bloody stools containing mucus and sloughed mucosa. There may be prompt, spontaneous remission, gradual improvement with relapses, or progression to a fulminating stage. Despite authoritative publication to the contrary, leukocytosis and fever may possibly occur from secondary infection, and one is faced with the problem of differential diagnosis even when *E. histolytica* is isolated. The therapy advocated in such cases is:

First ten days:

1. Erythromycin stearate, 200 mg., or Oxytetracycline, 500 mg., every six hours.

2. Concomitant administration of Carbarsone, 0.75 Gm. daily, Glycobiarsol, 1.5 Gm. daily, or Diidohydroxyquinoline, 1.9 Gm. daily.

Second ten days:

Choice of: Fumagillin, 60 mg. daily, or Carbarsone, Glycobiarsol, or Diidohydroxyquinoline. (Preferably, no drug used during first ten days to be repeated.)

Third ten days:

A drug selected from the foregoing nonantibiotic group at the same stipulated schedule, again preferably no drug previously used to be repeated.

In the acute stages supportive measures should be employed, as demanded by the individual case, i.e., parenteral fluids, dietary restriction to minimize residue of either liquids or soft food, replacement of blood if bleeding has been extensive, and antidiarrheal measures, including administration of bismuth, kaolin, sedatives, and opiates, as required. Emetine hydrochloride, 1 gr. subcutaneously, daily for a maximal period of ten days, is given only if the diarrheal manifestations are uncontrollable by antidiarrheal measures.

This stage of the disease has been known to be spontaneously reversible. If correctly diagnosed as an acute phase, complete cure is anticipated in all but the unusual case, since no invasion of deep tissue has occurred. The occasional intractable case deserves repetition of the program outlined, along with administration of Chloroquine diphosphate, 1 Gm. daily for twenty days. A follow-up examination with three fecal surveys at thirty day intervals should be adequate to determine whether the patient is "cured."

Chronic amebic colitis may be characterized by intermittent diarrheal episodes or by mild persistent diarrhea. Involvement of the right side of the colon is associated more often with intermittent diarrhea, whereas ulceration of the left side of the colon characteristically causes persistent diarrhea. Tenesmus is common. This is properly a tissue phase of the disease, with extension of amebic infiltration into the submucosal, but rarely into the

muscular, layers of the intestinal wall to cause extensive mucosal denudation, scarring, and occasionally formation of granulomas of varying size. These granulomas may slough out to form large fibrotic ulcerations or neoplastic-like "amebomas." True penetration is rare. Bleeding may be microscopic only, or it may be massive.

The therapeutic program for these patients incorporates the three ten day schedules outlined for acute amebic dysentery with the requisite addition of Chloroquine diphosphate, 1.0 Gm. daily, during twenty days of the treatment period.

Persistence of *E. histolytica* at the end of thirty days of treatment calls for repetition of the entire schedule, with the addition of Emetine, administered during the second ten days. Bed rest during the period of administration of Emetine, with control electrocardiograms, is mandatory in view of the cytotoxic action of this drug. Recurrence, reported fairly frequently in such cases, but rare in our own experience, requires repetition of the initial thirty day program. Fecal examinations should be made in these patients every thirty days for at least six months after completion of the therapeutic program.

The "asyndromic" or asymptomatic "cyst passer" should be considered a public health problem (a source of parasitic dissemination) and a potential symptomatic case when host-parasite relationship is altered to precipitate symptomatic amebiasis. This patient should be treated adequately, but not necessarily as intensively as the foregoing two. It is our opinion that treatment with three consecutive ten day courses of any of the intestinal amebacides, as outlined for acute amebic dysentery, is curative.

Extraintestinal amebiasis, manifested as hepatitis, hepatic abscess, pleuritis, draining sinuses, peritonitis, and peritoneal abscesses, and the more bizarre extremes of the disease, which fortunately are rare, all require the same intensive management outlined for chronic amebic colitis. Irrigation of abscesses with Emetine and Chloroquine, along with drainage, is often required.

Amebiasis cutis, in the absence of a fistula, is said to occur. Pruritus ani, concomitant with amebiasis, has been ascribed by some to *E. histolytica*. We have not observed confirmatory histopathologic changes and doubt this occurrence as a true amebic cutis. It is further believed that the pruritus ani in these cases is primarily a traumatic condition and does not necessarily reflect cutaneous involvement. In our experience, it subsides when the diarrhea is controlled. A presumptive diagnosis of amebiasis cutis may be justified and treatment similar to that endorsed for "asyndromic" or asymptomatic amebiasis may be employed. Emetine, however, has been enthusiastically endorsed as curative for cutaneous amebic involvement,[18] Therapeutic response, however, cannot be interpreted as more than presumptive that parasitization had existed.

The Defunctionated Colon with Amebiasis.—On 8 occasions we have encountered *E. histolytica* in colons defunctionated by ileostomy or proximal colostomy because of a pathologic condition other than amebiasis. The oral, or parenteral, administration of an antiamebic agent does not permit adequate colonic concentration of the drug for amebacidal influence. We have always had success with combined proximal and distal colonic instillation of Carbarsone and Diodoquin used alternately for ten day periods.

Prophylactic Administration of Amebacides.—Persons contemplating visits to out-of-state areas where water, food supply and food handlers have been incriminated as transmitters of amebiasis frequently request a prophylactic amebacide. Few available amebacides are sufficiently innocuous to permit such use. We are inclined, from our experience with the various agents, to endorse Diodoquin for this purpose for two reasons: (1) Fewest side effects have been encountered with Diodoquin. (2) None of 16 patients given Di-

odoquin for this purpose have experienced any untoward reaction nor has *E. histolytica* been isolated in any of their stools on examination following their return from areas in which the population incidence exceeded 25 per cent.

Surgical Intervention in Amebiasis has been well covered in three surgical treatises emanating from New Orleans.[19-21]

Appendicitis. — Often, amebiasis may simulate or be complicated by acute appendicitis. In the face of such an occurrence and the requirement for appendectomy, an increased risk is encountered in the presence of an unhealthy appendiceal stump leaking. Parenteral use of Emetine, Oxytetracycline, and Erythromycin is indicated. The danger of cytotoxic influence of Emetine is justified by the severity of the situation.

Amebic granulomas may be indistinguishable from a neoplasm. Whereas they often respond dramatically to amebacides, this is not always to be anticipated, nor do they always subside without leaving a residual questionable deformity. Proper preoperative preparation of the intestinal tract with Oxytetracycline in suspected cases should be adequate to produce a healthy anastomotic site. Use of Emetine preoperatively may not be justified, since it may increase the operative risk appreciably. Postoperative amebacidal therapy should be carried out as with chronic ulcerative amebiasis.

Hepatic and subphrenic abscesses not responding to adequate therapy and closed drainage may require operative drainage for complete eradication. *Parasitemia* with bizarre metastases to the brain,[5] genitourinary tract, and other sites requires all possible therapeutic aids supplemented by operation, if indicated.

SUMMARY AND CONCLUSIONS

Therapeutic achievements include the more conscientious efforts to evaluate drugs in terms of dose, sensitivity of amebic strain, tissue distribution, and fecal concentration in order to achieve an accurate dosage schedule. As yet, this goal has not been accomplished, but some index of applicability in relation to individualized needs is suggested.

Incorporation of the wide spectrum antibiotic drugs as intestinal amebacides invokes a new therapeutic concept in which these agents theoretically potentiate a four-fold action: (1) amebic inanition, by disturbance in bacterial flora, (2) control of secondary infection, (3) nullification of invasive bacterial aid to the amebae, and (4) direct amebacidal action. Of the antibacterial antibiotic drugs, Erythromycin and Terramycin are endorsed either as conditioning agents or true amebacides. Of the restricted bacterial spectrum antibiotic agents, Fumagillin is an excellent amebacide. Anisomycin, potent in vitro, will require more extensive clinical evaluation before its efficacy and innocuousness can be established. Two newer chemical agents, Win 12051 and Triamar under preliminary study have been indicated as potent amebacides.

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TRAUMATIC HYPHEMA *

J. A. WILKINSON, M. D.
SHREVEPORT

Hyphema, or blood in the anterior chamber of the eye, may be insignificant and transitory, or it may be serious and persistent. It may be a complication, of disease or surgery or it may be the result of injury. All of these are important, but we shall confine our discussion to hyphema of traumatic origin. The trauma may be direct or indirect, perforating or nonperforating. Bleeding into the anterior chamber comes from injuries of the iris or ciliary body, such as iridodialysis, aniridia, rupture of the sphincter or radial and circular tears. The chief source of anterior chamber hemorrhage is a tear at the root of the iris, or iridodialysis. In the recent state, the blood is bright red and settles to the bottom of the chamber, changing to a new level with each change in the position of the head. After a few days, the blood becomes darker and may clot. New hemorrhages are recognized by the bright red color superimposed on the darker layer. Frequently the hemorrhage completely fills the chamber, obscuring all landmarks and making it impossible to determine the extent of the injury. The majority of these hemorrhages absorb rapidly, but may be complicated by the occurrence of secondary hemorrhage several days later. Such hemorrhages may occur while the patient is resting quietly in bed and without any known provocation. They are seen more often in older people, though the young are not exempt. According to Duke-Elder,[1] these hemorrhages, on rare occasions may continue to recur at periodic intervals for weeks or even months, and tend to be more profuse than the primary bleeding, usually filling the entire chamber. He further states that the cause of these secondary hemorrhages, which create so serious a therapeutic problem, is unknown. When the hemorrhage is massive, particularly the delayed type, an organized clot may form blocking the drainage system of the eye. Secondary glaucoma may then ensue and if not relieved promptly will result in blood staining of the cornea.

Injury to the deeper structures of the eye may accompany or complicate hemorrhage into the anterior chamber, such as traumatic iridocylitis, cataract, vitreous hemorrhage, rupture of sclera, detachment of the choroid or retina.

Reviewing the literature briefly, we find considerable diversity of opinion concerning the management of hyphema, particularly as to the use of mydriatics. Most of us were taught that in any injury of the eye involving the iris or ciliary body atropine should be instilled. The purpose of this was to put the injured muscles at rest during the healing process, making the occurrence of iridocyclitis and synechiae less likely. In recent years, many authorities have warned against the routine use of atropine because of some serious complications.

Würdemann[2] says, "The treatment of hyphema is usually the same as that of the wound or contusion, namely, atropine, asepsis, and rest in bed;—If radial tears are seen, then atropine is contraindicated and esserin should be used to contract the pupil and draw the tears closer together."

* Presented at the Seventy-fifth Annual Meeting of the Louisiana State Medical Society, New Orleans, May 3, 1955.

No reference is made to the possibility of complications that might result from the use of atropine.

Dunnington,[3] discussing contusions of the globe with intraocular hemorrhage, said they should be treated with complete rest, cold compresses and frequent instillations of atropine sulphate solution, 1 per cent, to guard against the development of a traumatic iritis.

Payne[4] says the management of contusions of the eye calls for little action and considerable patience on the part of the ophthalmologist. It is suprising how many contusions will heal without complication following simple cleansing, bandaging, and rest. He says further that it is not necessary and is often dangerous to administer atropine solutions following nonperforating injuries.

Hardesty, Green, and Luedde in discussing contusions of the eyeball warned against indiscriminate use of atropine. They reported cases in which glaucoma immediately followed the use of this drug. Thus it would appear to be safer to use atropine only where iritis develops.

Thygeson and Beard,[5] after listing a series of cases and discussing the various causes and significance of hyphema, and the diversified opinions of numerous authorities in regard to treatment, concluded that present methods of management are unsatisfactory. The routine treatment which they adopted was as follows:

1. Hospitalization at absolute bedrest;
2. Five per cent homatropine drops in the injured eye four or five times daily;
3. Rutin (60 mg.) and vitamin C (300 mg.) three times daily; and
4. Barbiturates if the patients were children or apprehensive adults.

Several years ago Rychener,[6] in discussing this subject, made the following statement: "Most of the complications may be avoided by early and effective treatment, consisting only of simple paracentesis whenever the intraocular pressure is increased or when the anterior chamber is completely filled with blood and the instillation of miotics thereafter. Indeed, it may be possible in many cases to avoid surgery entirely if miotics rather than mydriatics are employed before secondary hemorrhage ensues."

So it would seem that the best treatment of anterior chamber hemorrhages following blunt injury consists of rest in bed, sedation, and bandaging of the eyes, preferably binocular. The majority of such hemorrhages may absorb satisfactorily with no other treatment. Ice compresses are soothing to the patient and tend to retard bleeding. Many authorities still stress the use of atropine to minimize aggravation of the iridodialysis which may be present, to reduce the likelihood of posterior synechiae and to combat the associated traumatic iridocyclitis. Those who oppose the use of atropine, or any other mydriatic, point out that, with an undilated pupil, a greater iris surface is available and a more rapid absorption of the hyphema may be expected. Furthermore, the chamber angle is less likely to be obstructed; consequently, secondary glaucoma is less likely to occur. Quoting from Duke-Elder, he says: "On the whole, any mydriatic is usually unnecessary and may be dangerous. In the presence of a hyphema, expectant treatment without the instillation of atropine is probably the safest course so long as the tension is normal or low. If anxiety is felt, however, the instillation of miotics rather than mydriatics at an early stage may forestall the complications of a hyphema and obviate the necessity of surgery. In secondary hemorrhages, and in all cases if the tension becomes raised, eserine should be instilled."

In conclusion, it would seem good to stress the following points:

1. Traumatic hyphema, though often not regarded with great concern, may terminate in a serious condition, even the loss of an eye.
2. The most frequent complications, aside from those directly due to the injury, are secondary glaucoma and blood staining of the cornea.
3. The treatment should consist of phy-

sical rest, sedation, bandaging of eyes. There should be a period of watchful waiting, observing the tension of the eyeball, the absorption of the hemorrhage or the occurrence of new hemorrhage.

4. Should increased tension develop, with the anterior chamber full of blood, paracentesis should be performed and a strong miotic instilled.

5. Atropine is usually unnecessary and may be dangerous.

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DISCUSSION

Dr. James H. Allen (New Orleans), I wish to congratulate Dr. Wilkinson for a very clear statement of the problem and controversy concerning the treatment of traumatic hyphema. As he has observed, the majority of cases of hyphema fortunately are simple and probably cure themselves. In these cases of short duration watchful waiting is all that is required.

In more severe injuries continued bleeding may be the result of severe trauma to the iris, or the hyphema may be maintained, or continued by repeated hemorrhage from the ciliary body. In cases of repeated hemorrhages the injury undoubtedly produced extensive but subtotal damage to the uveal vessels. Thus, minor trauma such as rubbing the eye, which the patient invariably denies, results in further hemorrhage from the partially necrotic vessels. Thus, in addition to general rest and dressing of the injured eye, it is important to shield the eye so the patient cannot even unconsciously rub the eye. For this purpose a rigid metal shield is preferable.

After having observed a number of severe cases of hyphema treated by different methods I have been unable to convince myself that either miotics or mydriatics have any effect upon the bleeding. Therefore, while I agree with Dr. Wilkinson that atropine is rarely necessary, I believe that mydriatics are essential for the control of the traumatic uveitis.

Unfortunately paracentesis and irrigation of the anterior chamber is a poor means of controlling the glaucoma, which may develop during the period of bleeding, and in addition, frequently reactivates the bleeding. Therefore, medical means of treatment are preferable. In a number of instances diamox has been useful in maintaining normal intraocular pressure in these cases even in conjunction with mydriatics. In such cases the blood usually remains in the anterior chamber for a longer period of time but may disappear completely overnight when the diamox is discontinued.

Another measure we have found to be valuable both in control of the uveitis and in increasing the adsorption of the blood is the use of small doses of intravenous foreign protein therapy. For this purpose we use doses of 10, 15 or 20 million typhoid H antigen daily. Larger doses producing a shock type reaction may be used but are more likely to aggravate the bleeding.

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RUPTURE OF THE URINARY BLADDER IN THE NEONATAL PERIOD WITH REPORT OF A CASE

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Rupture of the urinary bladder at or shortly following delivery is extremely rare, as shown by the fact that a review of the American and British literature reveals only two cases mentioned, but none fully reported. Factors which might predispose to rupture of the urinary bladder would be those which would cause unusual distention, weakness in the bladder wall, or combinations of the two with or without superimposed trauma. Trauma alone (to a normal bladder) conceivably could produce rupture. Specifically, neoplasm, calculi or abscess in the bladder outlet or urethra, congenital stenosis or inflammatory stricture might be mentioned. In boys extreme degrees of phimosis and congenital kinking of the urethra can occur and could predispose to bladder distention and rupture. Ulceration of the bladder wall (as in tuberculosis), fatty degeneration, diverticular or trophic changes as seen in central nervous system disease (especially paraplegia) must also be considered as possible factors for possible rupture of the bladder wall.

According to Smith,[1] the bladder con-

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tains fluid by the fourth month of gestation, and it is conceivable that unusual and severe trauma to the mother during pregnancy could damage the bladder of the infant. Trauma to the infant during delivery might also cause injury to the bladder, which could underlie a subsequent rupture.

That the bladder can tolerate considerable tension as well as trauma (with the exception of penetrating wounds) is well known. Rupture from any of the above causes, therefore, is uncommon. Campbell [2] states that it is doubtful that the empty normal bladder ever ruptures spontaneously, and that unnoticed trauma to a distended bladder is probably the most common cause of the so-called spontaneous rupture. According to him, intraperitoneal rupture usually involves the dome and accounts for one-third of bladder ruptures. It is suggested, especially in consideration of this case, that a ruptured bladder at least be borne in mind in any case of an acute abdomen in a newborn infant. If suspected, a cystogram would be diagnostically valuable, since rupture can be readily demonstrated by this technique.

CASE REPORT

The following is a case report:

S. B., a five day old white female premature infant, was admitted to the Charity Hospital at New Orleans on February 11, 1953, with a history of vomiting, abdominal swelling, and a generalized rash for one day. According to the history, the infant had an uneventful spontaneous delivery in a country town in the vicinity of New Orleans. No marked abnormalities were noted during the first four days of life. No history of trauma could be elicited in regard to either the baby or the mother. Apparently, there were no disturbances of bowel or bladder function as noted by the parents. On the fifth day, according to the parents, the abdomen became distended, the baby began vomiting and a rash appeared.

Physical examination on this day revealed a newborn infant weighing slightly under five pounds with abdominal distention, but not clinically dehydrated. No abdominal masses were palpated. Peristalsis was present. X-rays of the abdomen revealed dilated small bowel with some fluid levels when taken in the upright position. No distention was noted, nor could any air be seen in the colon. A diagnosis of mechanical intestinal obstruction, due probably to small bowel stenosis, was entertained. Because of the diagnosis of the mechanical intestinal obstruction, surgery was advised.

Under general anesthesia an abdominal exploration was done several hours later. The abdomen was entered through a right rectus incision. Upon opening the peritoneum, clear serous fluid with some fibrinous strings was found to be present. Distended small bowel was found to be present down to the region of the terminal ileum, and the most distant portions of the ileum and the large bowel were collapsed. There were fibrinous adhesions in the region of the terminal ileum, and it was at this point that a mechanical obstruction existed. The adhesions were easily separated, and upon close inspection of the intestinal tract no area of perforation or abnormality could be noted. The urinary bladder was distended, and it was noted at this point there were several strings of fibrinous exudate seemingly attached to the dome of the distended bladder. Upon gentle separation, a 2 mm. perforation was found in the dome of the bladder, through which urine emptied rapidly upon removal of the exudate. Because of the stage under which the sealing off process had progressed, it was felt that the perforation was at least forty-eight hours old. At the operating table, a sterile catheter was placed into the urethra and up into the urinary bladder. This catheter was seen to emerge into the free peritoneum. The perforation in the bladder was then sutured with several interrupted sutures of fine chromic catgut.

The first four post-operative days were uneventful. The infant was placed in the premature nursery in an Isolette and the usual premature care given. On the fifth post-operative day the abdomen became distended, and on the following day an evisceration became apparent. It was necessary to take the infant back to the operating room to do a secondary closure with through and through interrupted sutures of black silk. Following this, recovery was uneventful.

After two months the genitourinary department assisted in giving the infant a urologic work-up. The work-up, including an intravenous pyelogram and cystogram, was entirely normal. After three months the baby was apparently well and was discharged from the hospital. The weight at this time was 10 pounds 8 ounces. The infant was seen in the out-patient clinic several times. A repeat cystogram was again normal. There have been no further urinary tract complications.

As part of the follow-up of this case, the obstetrician who originally delivered this infant was questioned. Especial note was taken of the possibility of the infant having had any trauma or having been catheterized. Both of these possibilities were ruled out.

In discussion of this case, it would seem that a rupture of the urinary bladder in this premature occurred shortly before, at, or shortly after delivery. It is probable that the extravasated urine had caused a low grade peritonitis and that the resultant fibrinous exudate had managed to seal off the perforation. The infant was probably managing to survive this process very well until adhesions in the region of the terminal ileum and a fibrinous band caused a mechanical intestinal obstruction. The peristaltic waves in the premature infant were not sufficient to cause the intestinal contents to pass the point of the soft fibrinous band, with the result that surgical intervention was necessary.

CONCLUSION

An extremely rare condition, rupture of the urinary bladder in the neonatal period, was discovered. To our knowledge, this is the first case fully presented in the British and American literature. A case presentation is given with the treatment and successful outcome.

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COMMITTEE REPORT
CHARITY HOSPITAL COMMITTEE

GORDON W. PEEK, M. D.
Chairman
THOMAS CAMPANELLA, M. D.
FRANK W. PICKELL, M. D.
SPEARS RANDALL, JR., M. D.
ALBERT L. McQUOWN, M. D.

The following report is submitted by the Charity Division of the Fact Finding Committee of the East Baton Rouge Parish Medical Society. The Committee consists of five members appointed by the President of the East Baton Rouge Parish Medical Society in September 1953, for the purpose of studying the need for charity facilities in East Baton Rouge Parish. This Committee held its first meeting on September 22, 1953, to formulate plans for proceeding with the study. The approach decided upon was to study the economic situation in East Baton Rouge Parish and to secure records of those patients from this Parish who attended New Orleans Charity Hospital for the trimester September-December 1953. We had excellent cooperation from the East Baton Rouge Parish Chamber of Commerce and the personnel at the New Orleans Charity Hospital, who gave us a duplicate copy of the admission sheet of all patients admitted and all new clinic patients to Charity Hospital for these four months. These duplicate sheets were delivered once weekly and were compiled by the Secretary into columns giving home of patient, address, age, color, number of dependents and the stated employer and income.

A list of requirements for eligibility to Charity Hospital was then acquired (Table 1).

TABLE 1
ELIGIBILITY REQUIREMENTS FOR ADMISSION TO LOUISIANA STATE CHARITY HOSPITALS

Single:	$140.00 monthly
Couple:	$160.00 monthly
Dependents:	
1	$175.00 monthly
2	190.00 monthly
3	205.00 monthly
4	220.00 monthly
5	235.00 monthly
6	250.00 monthly
7	265.00 monthly
8	280.00 monthly
9	295.00 monthly
10	310.00 monthly

$15.00 extra is allowed for each dependent so that a couple with ten dependents may draw $310.00 monthly and meet eligibility requirements. This eligibility requirement is less for other charity hospitals throughout the state but is similar for the Shreveport Charity Hospital.

While the above Charity Hospital survey was being conducted, the Committee began to look into the economy of Baton Rouge and East Baton Rouge Parish. A pay scale was obtained from the major industrial plants and the building trades crafts. A copy of the Baton Rouge Chamber of Commerce report for Decem-

TABLE 2

ETHYL CORPORATION WAGE RATES (HOURLY) PAID EMPLOYEES
SODIUM & TEL AREAS—BASE RATES

Classification	Effective: 7-1-53		
	1st Class	2nd Class	3rd Class
OPERATIONS			
Working Leader	2.75	—	—
Operator	2.57	2.43	—
Junior Operator	2.22	—	—
Operator Helper	2.08	1.82	—
MAINTENANCE			
Blacksmith	2.59	2.42	2.25
Carpenter	2.59	2.42	2.25
Electrician	2.70	2.51	2.25
Electrical Inspector	2.77	—	—
Cable Splicer	2.81*	—	—
Instrument Inspector	2.67	—	—
Instrument Mechanic	2.59	2.42	2.25
Insulator, Cement Finished, Plasterer	2.59	2.42	2.25
Iron Worker	2.59	2.42	2.25
Machinist	2.59	2.42	2.25
Machinist, Outside	2.59	2.42	2.25
Mechanical Inspector	2.59	2.42	2.25
Painter	2.46	2.35	2.25
Pipefitter	2.59	2.42	2.25
Pipefitter Layout	2.66	2.59	—
Pipefitter Sketcher	2.66	2.59	—
Pump House & Power Working Leader	2.75	—	—
Pump House & Power Operator	2.57	2.43	—
Reclamation Mechanic	2.59	2.42	2.25
Rigger, Crane Operator	2.59	2.42	2.25
Rigger Inspector	2.67	—	—
Sheet Metal Worker	2.59	2.42	2.25
Sheet Metal Layout	2.66	—	—
Sign Painter	2.59	2.43	—
Sodium Service Mechanic	2.59	2.42	2.25
Steeple Jack Painter	2.59	—	—
Welder	2.70	2.51	2.25
Heavy Duty Mechanic	2.59	2.42	2.25
Helper	2.10	1.92	1.82
TRAIN CREW			
Trainman Leader	2.60	—	—
Trainman	2.44	2.40	2.35
CONTROL LABORATORY			
Special Laboratory Assistant	2.45	—	—
Senior Laboratory Assistant	2.38	—	—
Laboratory Assistant	2.24	2.07	—
Laboratory Helper	1.98	1.89	1.82
SERVICE			
Fireman (Inspector) Leader	2.29	—	—
Fireman (Inspector)	2.17	1.89	1.82
Laundry Leader	2.29	—	—
Laundry Operator	2.17	1.89	1.82
Patrol Leader	2.32	—	—
Patrolman	2.20	—	—
Escort Watchman	1.98	1.89	1.82
STORES			
Stores Leader	2.41	—	—
Warehouseman	2.24	2.06	—
Stores Helper	1.98	1.89	1.82

TABLE 2 (Continued)
ETHYL CORPORATION WAGE RATES (HOURLY) PAID EMPLOYEES
SODIUM & TEL AREAS—BASE RATES

Classification	Effective: 7-1-53 1st Class	2nd Class	3rd Class
LABOR			
Sodium			
Man Who Works Between Cells	1.75	—	—
Man Who Works Under Cells	1.75	—	—
Office Porter	1.75	—	—
CP Attendant	1.68	—	—
Laboratory Man	1.68	—	—
Man Who Sweeps Under Cells	1.68	—	—
Bath Grinding	1.68*	—	—
Burner Room	1.68*	—	—
Calcium Oven Man	1.68*	—	—
Chlorine Tank Car Cleaner	1.68*	—	—
Cleaning Acid Towers	1.68*	—	—
Cleaning Salt Bins	1.68*	—	—
Cleaning Water Towers	1.68*	—	—
Slacking Lime	1.68*	—	—
Washing Sodium Barrels	1.68*	—	—
TEL			
Freight Handler	1.75	—	—
Railroad Trackman	1.75	—	—
TEL Building Attendant	1.75	—	—
Burning Ground Job	1.68	—	—
Central Shops Clean-Up Man	1.68	—	—
Laboratory Attendant	1.68	—	—
Mail Carrier (Intraplant)	1.68	—	—
Safety Equipment Man	1.68	—	—
Sample Man (Contaminated Lead)	1.68	—	—
Special Laborer	1.68	—	—
Storehouse Man	1.68	—	—
SODIUM & TEL			
Truck Driver (Outside)	1.97	—	—
Truck Driver Leader	1.94	—	—
Working Leader	1.87	—	—
Truck Driver	1.87	—	—
Laborer	1.61	1.53	—
CAFETERIA — BASE RATES			
Cook Leader	2.13	—	—
Cook	1.88†	1.76†	—
Cook Assistant	1.58†	—	—
Cook on Mobile Unit	To be detailed an additional 6¢ per hr., 4 hrs./shift		
Baker	1.94	—	—
Storeroom Clerk	1.82	—	—
Mobile Unit Man	1.55**	—	—
Kitchen Helper	1.48	—	—
Cafeteria Attendant	1.32	—	—

* Detailing only.
** To be used for detailing of Kitchen Helpers only.
† To be used for detailing to Cook on Mobile Unit.

ber 1953 was also secured. This Committee was astonished to find the magnitude of the industrial pay, which was led by Standard Oil Company and followed closely by Ethyl Corporation. Table 2 is the pay scale at Standard Oil Company whose minimum rate for colored labor on the yard is $1.74½ per hour or $13.96 per eight hour day, with increased pay for night work, overtime, and holidays;

while the maximum colored rate is $2.67 per hour or $21.36 per eight hour day. The white general labor scale is slightly higher at $2.29 per hour as the lower range and $2.76 as the higher rate. The Ethyl Corporation also has a pay scale of which any company can be proud. The scale runs from $2.75 per hour or $22.00 per day for working leader 1st class to laborer 2nd class at $1.53 per hour or $12.24 per day. There is only one lower scale which is cafeteria attendant at $1.32 per hour.

The scale for the building trades craft stands head and shoulders above that of the industrial plants. The high is brick masons at $3.17½ per hour or a whopping $25.40 a day. Iron workers at $2.85 per hour, plumbers and pipefitters $2.90 per hour, filling station attendant at $1.97½ to $1.47½ for a light truck driver and a carpenter draws $2.33½.

Figuring the above upon a monthly basis of 23 working days, Standard Oil pays a high of $507.84 for white labor and a low of $421.36 while the colored laborer draws a high of $490.28 and a low of $310.08. Ethyl Corporation pays a high of $506.00 for a leader and a low of $281.52 for a laborer 2nd class. The build-

TABLE 3
NEW WAGE RATES FOR BUILDING TRADES CRAFTS
FOR CONTRACTS EXTENDING THROUGH DECEMBER 31, 1955

Craft	New Rate Now	New Rate July 1, 1954	New Rate Sept. 1, 1954	New Rate Oct. 1 1954
Brickmasons	3.10		3.175	
Ironworkers:				
Structural	2.775	2.85		
Reinforcing	2.65	2.725		
Laborer, Common	1.30	1.325		
Tender & Mortar Mixer	1.45	1.475		
Air Tool Operator	1.40	1.475		
Pipe Layer	1.40	1.475		
Tool Room Attendant	1.45	1.475		
Millwrights, journeyman	2.65	2.725		
Heavy Duty Operators	2.775	2.85		
Medium Duty Operators	2.50	2.575		
Light Duty Operators	2.36	2.435		
Plasterers	2.75	Same		
Plumbers & Fitters	2.90	Same		
Truck Drivers, up to but not including 1½ tons	1.475			1.515
1½ tons up to but not including 3 tons	1.725			1.765
3 tons up to but not including 5 tons	1.825			1.865
5 tons and over	2.025			2.065
Winch trucks with "A" frame	2.30			2.34
General Warehouseman, material checker, Stock Room Tool Issue & Receiving Clerk	1.90			1.975
Filling Station Attendant	1.90			1.975
Tire Repairman	1.75			1.825

Cement Finishers have been offered 5½¢ increase now and 6½¢ additional July 1. They are considering it.

Lathers are requesting a total of 12½¢. Contractors offering 10¢ total.

Carpenters are requesting a total of 16½¢ per hour. Contractors have offered a total of 14½¢ and feel that this is more than fair judging by other crafts. Carpenters now 2.33½.

ing trades come in for a high of $584.20 for brick masons to a low of $278.76 for light truck drivers. The man who repairs the tire at the filling station rates $1.82½ or $335.80 monthly.

The statement was recently made in a Baton Rouge paper and verified by the Chamber of Commerce that the industrial worker in Baton Rouge is the third highest paid in the United States, being topped only by Flint, Michigan and Casper, Wyoming.[1] A recent report by Sales Management Magazine[2] shows that more than half (50.2 per cent) of the families of East Baton Rouge Parish have an income of over $4,000.00 per year, with an average family income of $6,592.00 per year, or $549.00 per month, after Federal and state taxes are paid.

The breakdown is as follows:

$0 to 2,499.00	31.0%
2500.00 to 3999.00	18.8%
4000.00 to 6999.00	36.7%
7000.00 and over	13.5%

By comparison, the family income in Shreveport is $5,505.00; New Orleans $5,145.00; and Lafayette $4,128.00, while the national average is $5,246.00.

The estimated population of East Baton Rouge Parish in 1954 is 190,700 with 165,100 living in the city of Baton Rouge, making up 47,450 families. The labor force of this parish is made up of 74,800 workers with only 2,900 unemployed at the time of the last survey in 1952. The components of population are approximately 37 per cent colored and 63 per cent white.

To quote the Baton Rouge Chamber of Commerce, "The Baton Rouge family income and buying power rank 19 per cent above the national average" of $5,246.00 per year.[3] There are 65,728 (1954) automobiles exclusive of trucks and busses in East Baton Rouge Parish, or one per 2.8 persons. The average family size is four people.

A look at the state charity and welfare set-up reveals evidence of abuse of the free agencies of the state so that it is called the "Share the Wealth State" by *Nation's Business*, U. S. Chamber of Commerce magazine. It reports that Louisiana has 700 old aged per 1000 on the public assistance while Indiana has 129 per 1000 and the national average is 224 per 1000. Louisiana ranks second in the United States in expenditure for free school lunches with $11,178,558.00 per year, topped only by New York State with $19,359,096.00. Statistics show that 8 per cent of the (March 1954) people in the state are now on the welfare program, costing approximately $110,000,000.00 yearly.[4] A study begun recently and not yet complete (5-3-54) by the Public Affairs Research Council (P.A.R.) revealed that of 92 cases reviewed in Orleans Parish, 33 cases or 35.7 per cent were ineligible. In Tensas Parish, 26 of 79 cases or 32.9 per cent were fraudulent. The Charity Hospital situation reveals even greater abuse. There are 8 general charity hospitals located in strategic points throughout the state excluding several tuberculosis and mental institutions. There are 12 private hospitals with contract charity beds paid for by the state, not to mention the Veterans Hospitals and the Marine Hospital. The total so-called free beds in Louisiana made up of the above list[5] and the private beds are shown in Table 4:

TABLE 4
HOSPITAL BEDS IN LOUISIANA

Free Beds	
U. S. Army	700
U. S. Public Health	886
Veterans Hospitals	1,445
State	
Mental	8,216
Tuberculosis	394
General Charity	4,591
Total free	16,232
The Private Beds (including tuberculosis and mental):	
I. C. R. R.	60
Psychiatric	247
Tuberculosis	89
Shrine	60
General	5,589
Total pay	6,045

These statistics (Table 4) show that there are now about three free beds to one

private bed in the state. These charity hospitals admitted as bed patients approximately 129,570 patients in 1953 with average stay varying from 3.9 days per patient at Lallie Kemp Charity Hospital to 13 days at Jonesboro Charity and at a cost per day varying from $7.86 per patient at Lafayette Charity Hospital to $8.51 per day per patient at Jonesboro.

In addition to those admitted, there were approximately 921,129 Clinic visits.[6] (Table 5) Mind you, the population of Louisiana in the last census, 1950, was only 2,683,516. Of this group there are 336,250 veterans who are eligible generally for Veterans Administration Hospitals. The following list (Table 6) is submitted in evidence of the abuse of the charity system as the following patients were admitted to a charity hospital in one month (Sept. 1953) from one parish after stating at the admission visit they held the following jobs and drew the following salaries.

There is also an intricate system of charity ambulance service throughout the state with a fleet at Baton Rouge and Lake Charles. They traveled 219,056 miles in 1953, transporting patients to New Orleans Charity Hospital.

The Committee survey of the East Baton Rouge Parish situation revealed that there were 1248 patients admitted to New Orleans Charity Hospital or assigned to the Clinic from September to December 1953, or approximately 3,744 per year, or less than 2 per cent of population. Of this group there were 1071 (85 per cent) colored and 177 (15 per cent) white. Of the total, 437 (35 per cent) were admitted for delivery. Of the total group 13 per cent admitted ineligibility due to income when questioned at the Admitting Unit. Those admitting ineligibility along with

TABLE 5
DEPARTMENT OF INSTITUTIONS
STATISTICS ON GENERAL HOSPITALS
QUARTER ENDING SEPTEMBER 30, 1953

Hospitals	Operating Costs	Admissions	Patient Days	Clinic Visits *	Units of Service	Average Days Stay	Cost Per Day	Cost Per Patient
Lallie Kemp	$ 107,260.05	1,410	5,595	11,952	8,583	3.9	$12.50	$ 49.58
Charity Hospital	429,040.20	5,640		47,808				
Huey P. Long	190,445.92	2,249	14,918	18,187	19,465	6.6	9.78	64.90
Charity Hospital	761,783.68	8,996		72,748				
Lafayette Charity	234,907.63	3,676	26,869	11,988	29,866	7.3	7.86	57.49
Hosp. & T.B. Unit	1,099,630.52	14,704		47,952				
Wash-St. Tammany	77,577.23	1,065	4,757	6,255	6,321	4.5	12.27	54.82
Charity Hospital	310,308.92	4,260		25,020				
Jonesboro Charity	10,628.09	10	130	8	132	13.0	80.51	1,046.71
Hospital	42,512.36	40		32				
E. A. Conway	190,415.09	3,000	16,697	9,565	19,088	5.5	9.97	55.52
Memorial Hospital	761,660.36	12,000		38,260				
Quarterly:	$ 811,234.01	11,410	68,966	57,955*	83,455	6.0	$ 9.72	$ 58.75
Annual:	3,244,916.04	45,640		231,820				

Admissions 1951-2

New Orleans Charity Hospital	62,705
Clinic	613,138
Shreveport Charity Hospital	20,733
Clinic	76,171

Admissions 1953

Total Out Patients	921,129
Total In Patients	129,570
Total Charity Hospital	1,050,699

About 6% of population in charity hospital in 1951-1952.

* Out-patient visit evaluated at one-fourth In-patient day.

those already certified by the Welfare were dropped from the list to be investigated, leaving approximately 884 for the four months. Due to limited funds of this Committee only 126 of these were selected for investigation. A trained investigator was then hired and paid on basis of an agreed amount per family to look into the family financial set-up. He was furnished a copy made from the Charity Hospital admission sheet listing name, address, age, color, stated number of dependents, place of employment and stated income. He then visited the home and reported upon

TABLE 6
CHARITY HOSPITAL SURVEY

1. Inpatient and outpatient treatment:

9- 1 thru 10- 2-53:	Inpatients	391	(346 colored,	45 white)
9-15 thru 9-29-53:	Outpatients ..	52	(44 colored,	8 white)
		443	390	53

Average cost per day: $10.80
Average days 12

Outpatients, 1946 (last year survey made) 21,000.

2. Ineligible by own admission of income (admit sheet) 51 persons or approximately 12%.

3. Incomes of some ineligibles:

Occupation	Monthly Income	Dependents
1. Lab. Stone and Webster	$200	1
2. Service station	184	0
3. Truck driver	240	4
4. Insulator	260	8
5. City-Parish	160	0
6. Plasterer	200	2
7. Floor sander	200	4
8. City-Parish	180	1
9. Laborer-Industrial contractor—$180; Wife—Domestic @ $40	220	1
10. Waiter—Picadilly	180	1
11. Wolf's Bakery—Truck driver	226	3
12. Saleslady—Department store*	180	1
13. Insurance Salesman	200	2
14. Truck driver	160	0
15. Mechanic—Sears Roebuck*	180	1—(Has hospital & surgical insurance)
16. Owner cafe*	240	1
17. Carpenter @ 324, Wife @ 80	404	1
18. Standard Oil	220	3
19. Brakeman, I. & A. R.R.	200	1
20. Furniture salesman	194	0
21. Solvay Construction Co.	220	2—(25 colored 11 white)
22. Construction company*	168	1
23. Ethyl Corporation	200	2
24. Laborer @ 140, Wife—Cook @ 140	280	2
25. Kaiser Aluminum*	284	1
Clinic		
1. Construction work	200	1
2. B. R. Engineering Depot	192	3
3. Parking lot	180	1
4. Electrician	363	6
5. School teacher	288	2
6. ? Occupation unlisted	180	1

* (Mark indicates new born infant, in addition to mother).

TABLE 7
DEPARTMENT OF INSTITUTIONS
FREE AMBULANCE SERVICE—STATE OFFICE
QUARTER ENDING SEPTEMBER 30, 1953

Units	Operating Costs	Miles Traveled	Number of Trips	Average M.P.T.	Cost per Trip	Number of Patients
Lake Charles	$2,454.40	21,565	78	276.5	$31.47	103
Baton Rouge	4,096.68	33,199	167	198.8	24.53	303
Totals	$6,551.08	54,764	245	223.5	$26.74	406

the house, furniture, automobile and number of dependents. The investigator then contacted the employer to certify stated income. When the study was completed and all figures compiled, it was noted that 13 per cent admitted ineligibility before investigation and another 31.5 per cent of those investigated were found to be ineligible. It was also noted that 35 per cent of those admitted were for delivery. A check with the local obstetricians revealed that a patient may receive prenatal care, delivery, post-natal care and hospitalization for approximately $200.00 which could be paid in installments over a period of nine months to a year. There

TABLE 8
DEPARTMENT OF INSTITUTIONS
STATISTICS ON CONTRACT BED HOSPITALS
QUARTER ENDING SEPTEMBER 30, 1953

	Costs Operating	Admissions	Patient Days	Average Days Stay	Cost Per Day	Cost Per In-patient
Baton Rouge General Hospital	$ 317.90	6	21	3.5	$15.14	$52.98
Baton Rouge, Louisiana	1,271.60	24				
Beauregard Memorial Baptist	549.70	13				
Hospital, DeRidder, La.	2,198.80	52	51	3.9	10.78	42.28
Franklin Foundation Hospital	976.00	13	66	5.1	14.79	75.07
Franklin, Louisiana	3,904.00	52				
Franklin Medical Center	58.00	1	3	3.0	19.33	58.00
Franklin, Louisiana	232.00	4				
LaSalette Memorial Hospital	762.00	8	52	6.5	14.65	95.25
Loreauville, Louisiana	3,048.00	32				
Natchitoches Hospital	407.24	10	29	2.9	14.04	40.72
Natchitoches, Louisiana	1,628.96	40				
Ruston Hospital	105.05	3	8	2.7	13.13	35.02
Ruston, Louisiana	420.20	12				
St. Charles Legion Memorial	613.68	14	78	5.6	7.87	43.83
Hospital, Newellton, La.	2,454.72	56				
St. Patrick Hospital	2,782.45	40	207	4.8	13.44	64.71
Lake Charles, La.	11,129.80	172				
St. Elizabeth Hospital	739.73	10	36	3.6	20.55	73.97
Paincourtville, La.	2,958.92	40				
Dr. Steven's Clinic-Hospital	48.00	2	3	1.5	16.00	24.00
Lake Charles, La.	192.00	8				
Our Lady of the Lake Sanitarium	829.97	10	63	6.3	13.17	82.99
Baton Rouge, La.	3,319.88	40				
TOTALS Quarterly:	$ 8,189.72	133	617	5.0	$13.27	$66.58
Annual:	32,758.88	532				

TABLE 9
DEPARTMENT OF INSTITUTIONS
DENTAL PROGRAM
QUARTER ENDING SEPT. 30, 1953

	Operating Costs
Personal Services	$ 2,685.00
Fees for Professional Services	6,455.00
Contractual Services	100.59
Traveling Expense	947.00
Materials & Supplies	918.02
TOTAL Quarter:	$11,105.61
	x 4
Annual:	$44,422.44

are also many insurance companies in this area who carry health and accident benefits at a reasonable rate within the reach of most of these individuals.

A survey in 1950 of the hospital facilities in East Baton Rouge Parish revealed a slight deficit of beds, our average being 3.76 beds per 1000 population whereas 4.1 beds per 1000 is desirable, U. S. Public Health estimate. This does not include charity bed allotment. This deficit has probably been increased some since the population has increased 25,000 since 1950. However, at the present time there are 525 beds in Baton Rouge and a drive is now on to build an annex to the Baton Rouge General Hospital allowing approximately 100 beds (new) in the near future. The 1950 survey also showed that the available beds were never 100 per cent filled. There are also 125 beds at New Orleans Charity Hospital allotted to East Baton Rouge Parish.

A recent report by the Administrator of the Baton Rouge General Hospital, submitted January 1954, revealed that approximately 7 per cent of traumatic cases treated in the emergency room were considered charity and turned over to the state for payment. However, upon investigating this situation, it was found that many of these cases were turned over within a few days after treatment without having been billed or contacted for payment. The administrator also revealed in his report that approximately 60 per cent of all admissions in Baton Rouge last year had some type of hospitalization and surgical insurance.

SUMMARY

Criterion of indigency at Charity Hospital of Louisiana appears to be sound as a family with ten dependents may draw $310.00 monthly and meet requirements.

Louisiana has been called the Welfare State ("Share the Wealth State") of the Union with the highest welfare roll and old age pension roll in the nation.

Louisiana has the highest number of charity beds per capita of any state in the nation with eight charity hospitals strategically located and twelve private hospitals with contract charity beds. There are approximately three free beds to each pay bed in Louisiana.

There is a free charity ambulance servive covering Louisiana with a fleet of ambulances stationed in both Baton Rouge and Lake Charles, La., the only major cities without Charity Hospitals.

There is evidence of gross abuse of the free facilities of the state by people not meeting eligibility requirements. The survery showed that in one hospital 13 per cent of those admitted were found ineligible by their own statement at time of admission and 31.5 per cent of those investigated by this committee were found ineligible. It was also noted that 35 per cent of those admitted from this Parish were for delivery which is a relatively inexpensive service.

Baton Rouge was found to have the third highest income per family in the nation with an average of over $6,500.00 per family unit after Federal and State taxes were paid.

There are approximately two automobiles per family in Baton Rouge.

The number of hospital beds in Baton Rouge and surrounding area is slightly below the desired national average but with a current program for expansion under way, there should be adequate beds in the near future.

Charity hospital beds allotted to this Parish are not included in the above survey.

The survey also reveals that less than 2 per cent of the population of East Baton Rouge Parish is registered for care in the year studied.

CONCLUSIONS

A change in the system of admissions to our charity hospitals to eliminate those ineligible should provide adequate charity facilities.

The per capita income of Baton Rouge and East Baton Rouge Parish is such that health and accident insurance is within the reach of all citizens, and nearby facilities are adequate for the truly indigent.

The state is at present over-burdened with welfare and charity systems. There is no need to build a Charity Hospital in Baton Rouge.

REFERENCES

1. Baton Rouge Chamber of Commerce Publication dated Dec. 1953, Page 5.

2. Sales Management Survey Magazine 1953.

3. Baton Rouge Chamber of Commerce Publication dated Dec. 1953, Page 5.

4. Public Affairs Research Council, March 1954.

5. Hospital Issue Journal of the American Medical Association, 1953.

6. Governor's report at meeting, October 1953.

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THE POLIO SITUATION AND VACCINATION IN LOUISIANA

This is the time for physicians in Louisiana to undertake the vaccination against polio. The experience in 1954 in the massive field trials of polio vaccine of the Salk type was favorable, and it was shown to give approximately 75 per cent protection. During the late spring and early summer of 1955, interest in use of the vaccine declined. This was the natural consequence of general suspicion aroused by the reporting of cases of polio immediately following the use of the vaccine. This was traced to certain batches of a particular vaccine, following which the use of all vaccines was temporarily suspended. In succeeding weeks the manufacture and testing of all vaccines was reviewed. Retesting was accomplished, and revised standards of safety were established. Administration of the vaccine, manufactured in accordance with these revised standards of safety, has continued, and no suspicion of the induction of polio has been raised. Up to the present, approximately ten million children in five countries have been vaccinated against poliomyelitis with no ill effects apart from the comparatively few cases mentioned above. The experience in these five countries has been favorable. Using the vaccine manufactured under the revised standards of safety, typical experience in the United States may be briefly stated as follows: In New York State, out of 450,000 children from 6 to 10 years of age who were vaccinated, 153 contracted polio. Of these 18 suffered from the paralytic form of the disease. These figures may be compared with a "control" group of 280,000 children of the same age group among whom there were 178 cases, 59 being paralytic. The rates of incidence of the paralytic form obtained by this study were 4 per 100,000 for vaccinated groups, and 21 per 100,000 for unvaccinated. In Minnesota, in a similar report, the rate for the paralytic form of polio was 2.7 per 100,000 for vaccinated children against 30.1 for unvaccinated.

The experience in our own state is contained in an article in this issue by Dr. J. D. Martin, Epidemiologist of the State Board of Health. It is stated there that between April 18 and December 15, 1955, there were 164,910 children in the first and second grades at school in Louisiana. Of these, 81,695 received two injections of the polio vaccine. Eighty-three thousand two hundred and fifteen elected not to be vaccinated. A study of occurrence of poliomyelitis in the two groups shows

that more than seven times as much paralytic polio and more than five times as much of all the forms of polio occurred in the nonvaccinated group as in the vaccinated. The obvious deduction is that polio vaccination is effective in lowering the occurrence of paralytic poliomyelitis and in decreasing the occurrence of all forms of polio.

Dr. Salk who developed the vaccine advises three injections, the third being as a booster seven months after the second. About sixty days is required to develop optimum protection.

The polio season in Louisiana begins in April. If injections were given during the current month and again in sixty days, optimum protection would be afforded by the middle of the spring when the season starts.

The State Poliomyelitis Advisory Committee, composed of representatives of the Louisiana State Medical Society and the State Department of Health, met with the State Health Officer on January 4, 1956, and reviewed the facts of the situation as given above. This Committee suggests that physicians immunize all pregnant women and all persons 20 years of age and under as quickly as they can.

The vaccine is readily available and may be obtained as usual through regular commercial channels or from Parish health units in accordance with existing regulations. The distribution of the vaccine in this state, in accordance with the wishes of the State Health Officer, Dr. S. J. Phillips, in keeping with the express preferences of the Louisiana State Medical Society, has depended chiefly upon administrations by the private physician. Administration by Parish Health units has been under conditions similar to that under which other inoculations have been routinely administered.

The distribution, administration, and the results in Louisiana of polio vaccination have been most fortunate. It is in the interests of the profession and of the public that the private physician continue to keep it this way.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

INFORMATION OF THE JOINT COMMISSION ON ACCREDITATION OF HOSPITALS

Medical Records

Medical records are an important tool in the practice of medicine. They serve as a basis for planning patient care, they provide a means of communication between the physician and other professional groups contributing to the patient's care, they furnish documentary evidence of the course of the patient's illness and treatment, and they serve as a basis for review, study, and evaluation of the medical care rendered to the patient. For these reasons the Joint Commission on Accreditation of Hospitals considers the quality of medical records an important indication of the quality of patient care given in a hospital.

Since medical records reflect patient care, the Commission evaluates a medical record on the basis of whether or not it contains sufficient recorded information to justify the diagnosis and warrant the treatment and end results. In agreement with this principle, the Commission has established certain standards of record keeping which it thinks are essential for good patient care.

I. CONTENT—Medical records should contain the following information:

1. Identification data
2. Provisional diagnosis

There should be a provisional or admitting diagnosis made on every patient at the time of admission. If a patient requires hospitalization, the hospital staff deserves this information to proceed intelligently.

3. Chief Complaint
4. Present Illness
5. History and Physical Examination

Only physicians and house staff are competent to write or dictate medical histories and physical examinations. All pertinent positive and negative findings should be recorded. Nurses, medical record librarians, or secretaries should not be permitted to take medical histories.

6. Consultations

Consultations imply an examination of the patient and the patient's record. The consultation note should be recorded and either signed or authenticated by the consultant.

7. Clinical Laboratory Reports

The original signed laboratory report should be entered in the patient's record. Duplicates are filed in the laboratory.

Reports from laboratories outside the hospital are acceptable in lieu of tests performed in the hospital if the following safeguards are maintained:

a. Work is done in a laboratory approved by the city or state. Laboratory work performed in a physician's office by a technician, nurse, or office assistant is not acceptable. Since the hospital is held responsible for the quality of laboratory work reported in the medical record, it must limit outside laboratory work to approved laboratories.

b. The test is recent enough to be pertinent to the individual case. For example, a serological test for syphilis or an Rh determination done any time during the prenatal period would be acceptable. A urinalysis done prior to 48 hours of admission would not.

c. The original laboratory report is made part of the medical record.

8. X-ray Reports

The original signed radiological report should be entered in the patient's record. Duplicates are filed in the department.

9. Tissue Report

Since all tissues removed in surgery are sent to the laboratory, at least an acknowledgment that the tissue has been received and a gross description should be made part of the record. If a microscopic examination is done, a description of the findings should be made a part of the record. Whether or not a microscopic examination is done should be determined by the medical staff and the pathologist according to the rules and regulations of the hospital.

10. Treatment—Medical and Surgical

All treatment procedures should be documented in the medical record. Except in cases of grave emergency, the patient should receive a complete diagnostic work-up before surgery. Operative notes should be dictated immediately after surgery and should contain both a description of the findings and a detailed account of the technique used and tissues removed.

11. Progress Notes

Progress notes are important in that they give a chronological picture and analysis of the clinical course of the patient. The frequency with which they are made is determined by the condition of the patient.

12. Final Diagnosis

A definitive final diagnosis based on the terms specified in the Standard Nomenclature of Diseases and Operations should be written.

13. Summary

A summary of the patient's condition on discharge and course in the hospital is valuable as a recapitulation of the patient's hospitalization.

14. Autopsy Findings

When an autopsy is performed a complete protocol of the findings should be made a part of the record.

II. SIGNATURES

1. In hospitals without house officers the attending physician should separately sign the history, physical examination, operative report, progress notes, drug and other orders, and the summary. Standing orders should be reproduced on the record and signed by the physician.

2. In hospitals with house officers, the attending physician should countersign at least the history, physical examination and summary written by the house officer. Aside from the fact that this is a legal requirement in many states, it is a protection to the individual physician. It is not considered necessary to countersign progress notes or drug and treatment orders written by house officers. In all instances a physician should sign the clinical entries which he himself makes.

3. A single signature of the physician on the face sheet of the medical record does not suffice to authenticate the entire content of the record.

4. The use of rubber stamp signatures is acceptable under the following strict conditions: able under the following strict conditions:

a. The physician whose signature the rubber stamp represents is the only one who has possession of the stamp and is the only one who uses it.

b. The physician places in the administrative offices of the hospital a signed statement to the effect that he is the only one who has the stamp and is the only one who will use it.

5. Initials in place of a full signature are acceptable provided that the initials can be recognized as having been placed there by a particular physician who can be identified by those initials.

III. OBSTETRICAL RECORDS

There should be a prenatal history and physical examination on every obstetrical patient. If the hospital and medical staff permit and records are of good quality on forms approved by the hospital, a copy of the prenatal record kept by the physician in his office may be substituted for a history and physical examination done in the hospital.

IV. READMISSIONS

If a patient is re-admitted within a month's time for the same condition, the previous history and physical examination with an interval note will suffice.

V. NURSES' NOTES

The Commission has no requirements concerning nurses' notes. It is the responsibility of the local medical and nursing staffs to develop policies concerning the type and extent of nurses' notes to be kept.

VI. FORMS

1. The Joint Commission on Accreditation of Hospitals recommends no specific medical record forms. Records are evaluated on the basis of content and whatever forms the hospital finds most useful are acceptable. It is common experience that check-off lists do not adequately provide sufficient information to substantiate the diagnosis and treatment.

2. Short Forms

A short form medical record is acceptable in certain treatment and diagnostic cases of a minor nature which require less than 48 hours hospitalization. Short forms may be appropriate for such conditions as tonsillectomies, cystoscopies, lacerations, plaster casts, removal of superficial growths, and accident cases held for observation. The short form should at least include identification data, a description of the patient's condition, pertinent physical findings, an account of the treatment given and any other data necessary to justify the diagnosis and treatment. The record should be signed by the physician.

VII. FILING AND MAINTENANCE OF MEDICAL RECORDS

1. Current records should be completed insofar as possible within 24-48 hours.

2. After discharge, records should be completed insofar as possible within 10-15 days.

3. A system of identification and filing to insure the rapid location of a patient's medical record should be maintained. The unit number system is suggested; however, a serial number system or modification of this is acceptable.

4. Records should be indexed according to disease, operation, and physician.

5. If medical records are coded, it is suggested that the Standard Nomenclature be used.

VIII. PRESERVATION OF MEDICAL RECORDS

The Joint Commission on Accreditation of Hospitals has no standards governing the preservation of medical records. The length of time a medical record is preserved is a matter which should be determined by the local hospital and local laws.

Methods of preservation by microfilming or other means of storage is a decision for the individual hospital to make.

IX. OWNERSHIP

The medical record is the property of the hospital and is maintained for the benefit of the patient, the physician and the hospital. It is the responsibility of the hospital to safeguard the information on the record against loss, tampering, or use by unauthorized persons.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

SPECIAL REQUEST

Since supply of the February, 1955 issue of the Journal is exhausted it will be greatly appreciated if available copies are sent to the Journal office, 1430 Tulane Avenue, New Orleans.

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

Dr. G. Foard McGinnes of Washington, D. C., will speak on "The Present Status of Poliomyelitis Vaccine" on Tuesday, February 28, 8:30 p.m., Municipal Auditorium.

Dr. McGinnes has been serving as a medical consultant to the National Foundation for Infantile Paralysis since 1953 and as director of the National Foundation's vaccine program. Prior to joining the medical staff of the National Foundation, Dr. McGinnes was associated with the American Red Cross since 1943 and served as Red Cross vice president for health services from 1947 until he assumed his present position. Before his affiliation with the Red Cross, Dr. McGinnes had had nearly twenty years of administrative and teaching experience in public health and preventive medicine.

The sum of experience with the Salk vaccine proves it to be a safe and effective means of preventing paralytic poliomyelitis. This discussion will take up the development of the vaccine, including its manufacture and safety-testing; the evidence supplied by 1955 experience for its high degree of effectiveness; current recommendations for its administration, and an estimate of its availability before the 1956 polio season.

A question and answer period will follow.

AMERICAN ACADEMY OF OBSTETRICS AND GYNECOLOGY

The fourth annual interim meeting of District VII of The American Academy of Obstetrics and Gynecology will be held at the Peabody Hotel, Memphis, Tennessee, March 9-10, 1956.

A two day program has been planned, consisting of 11 scientific papers by Fellows, 6 unusual case reports, 9 short papers by Residents and 16 Luncheon Round Tables.

The Academy banquet with entertainment to follow will be held on Friday evening, March 9th.

Wives are invited.

Doctor William T. Black, Jr., is Chairman of the local Arrangements Committee.

LOCAL DOCTORS INDUCTED INTO FELLOWSHIP IN THE AMERICAN ACADEMY OF OBSTETRICS AND GYNECOLOGY

The American Academy of Obstetrics and Gynecology has announced that the following doctors were inducted into Fellowship in The Academy at the Annual Business Meeting during the Fourth Annual Clinical Meeting of the organization at The Conrad Hilton, Chicago, December 12-14, 1955: Herman R. Cohen, M. D., Earl Conway Smith, M. D., and Aynaud M. Hebert, M. D., all of New Orleans.

The American Academy of Obstetrics and Gynecology was organized in 1951 to foster and stimulate interest in obstetrics and gynecology and all aspects of the work for the welfare of women which properly come within the scope of obstetrics and gynecology. It is an organization of physicians whose practices are limited to the medical specialty of obstetrics and gynecology.

BOOK REVIEWS

Modern Diagnosis and Treatment of the Minor Venereal Diseases; by Orlando Canizares, M. D., Springfield, Illinois, Charles C Thomas, 1954. Pp 131, Price $3.75.

This is an excellent little monograph. It is not an authoritative source but it gives all of the necessary practical information required to diagnose and treat lymphopathia venereum, granuloma inguinale, and chancroid. Since these diseases are lightly treated in standard texts this monograph is an important contribution.

FRED M. HUNTER, M. D.

Standard Values in Nutrition and Metabolism; by E. C. Albritton, (Editor), Philadelphia, W. B. Saunders, 1954, Pp. 380, Price $6.50.

As noted in the foreword, this volume is the second in a series of *Handbooks of Biological Data.* For the monumental task of compiling and arranging the data the editorial committee deserve a vote of thanks from their colleagues.

On the assumption that the information given in the tables with which the reviewer is not familiar is as accurate as that with which he has some acquaintance the values presented have been carefully selected and usefully tabulated.

The value of the book to the clinician would appear to be questionable since relatively little, except perhaps in the section on Nutrition of Foodstuffs, is concerned with man. Most of this same data is also readily available elsewhere. For those who are involved in the basic sciences, however, the book may prove to be of considerable use in saving the time involved searching the original literature for standard values of an obscure nature.

ALAN G. C. WHITE, M. D.

PUBLICATIONS RECEIVED

The C. V. Mosby Co., St. Louis: The Interpretation of the Unipolar Electrocardiogram, by Gordon B. Myers, M. D.

Simon and Schuster, N. Y.: The Complete Medical Guide, by Benjamin F. Miller, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Physiology and Pathology of Infant Nutrition, by L. F. Meyer, M. D., and Erich Nassau, M. D.; Postural Back Pain, by Milton C. Cobey, M. D.; Causal Factors in Cancer of the Lung, by Carl V. Weller, M. D.